10 TIME-SAVING MAC KEYBOARD SHORTCUTS

Macworld

NOVEMBER 2021

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iPHONE 13 PRO

THE MACWORLD REVIEW

EVEN AFTER ALL THESE YEARS,
THE iPHONE CONTINUES TO IMPRESS

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Macworld

EDITORIAL DIRECTOR Matt Egan

EDITOR IN CHIEF Marie Black

DESIGN DIRECTOR Robert Schultz

EXECUTIVE EDITOR Michael Simon

Editorial

SENIOR EDITOR Roman Loyola

STAFF WRITER Jason Cross

SENIOR CONTRIBUTORS Glenn Fleishman, Rob Griffiths, Joe Kissell, Kirk McElhearn, John Moltz, Dan Moren, Jason Snell

COPY EDITOR Gail Nelson-Bonebrake

Design

ART DIRECTOR Steve Traynor

DESIGNER Rob Woodcock

Advertising

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HOW TO CONTACT MACWORLD STAFF

Our offices are located at 501 Second Street, 6th Floor, San Francisco, CA 94107; phone, 415/243-0505; fax, 415/512-7130. *Macworld* staff can be reached by email at *firstname_lastname*@idg.com.

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Make the forest part of your story.
Remember the last time your family visited the forest? It's a place of wonder and imagination for the whole family—where stories come to life. And it's closer than you think. Sounds like it's time to plan your next visit. Make the forest part of your story today at a local park near you or find one at DiscoverTheForest.org.
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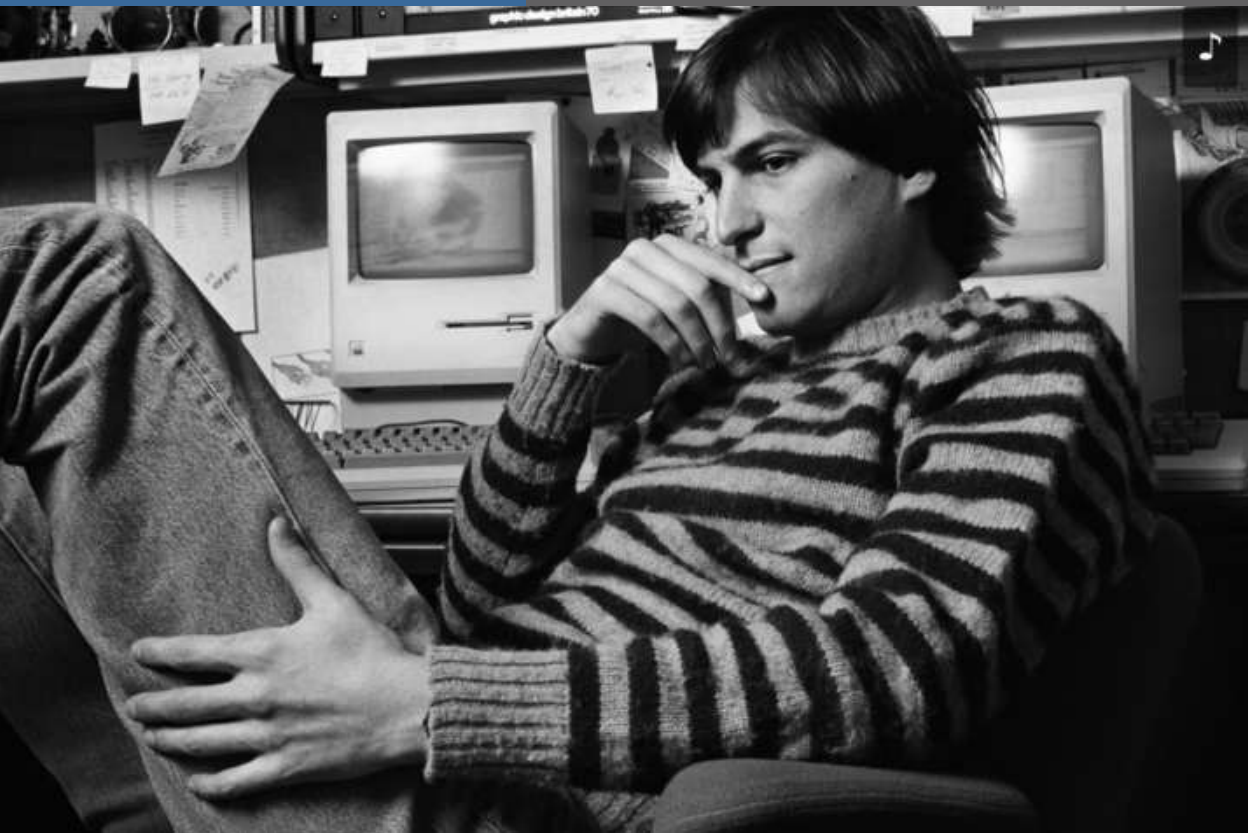


Steve Jobs' five most memorable Apple products (and one more thing)

Unforgettable products from an unforgettable man.

BY ROMAN LOYOLA

Steve Jobs' impact was so significant that it's difficult to find the words to describe his influence on business, technology, and society, even 10 years after his death (fave.co/3Bnogmo). It's hard to narrow down the products released under his watch to a list of just five. But we tried anyway. Here's our list of the most memorable products released during

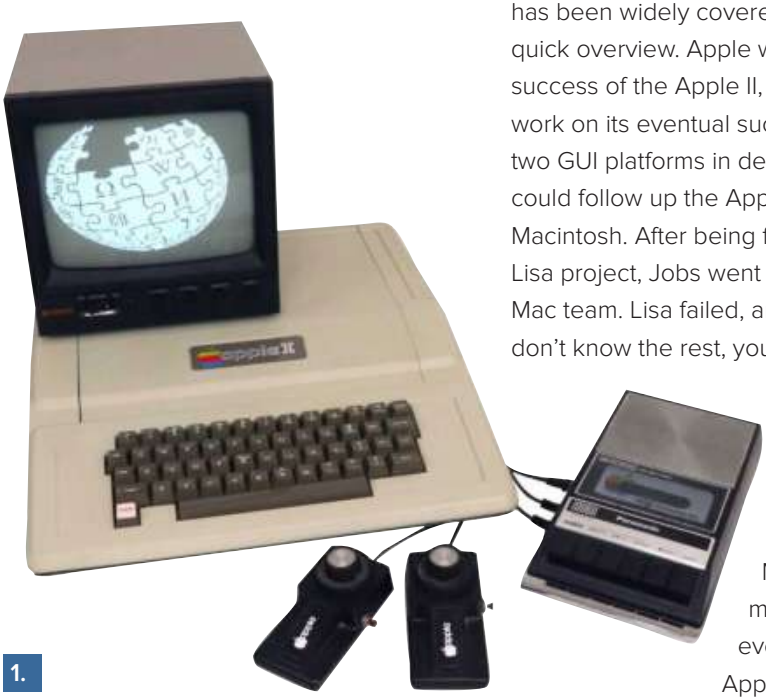
IMAGE: APPLE

Steve Jobs' tenure with Apple. Also note that Apple has posted a film, *Celebrating Steve* (fave.co/3DDAsQD), to commemorate the tenth anniversary of Jobs' death.

1. APPLE II

Everyone remembers the Mac (see item two on this list), but the Apple II (fave.co/2YjYuAE) was the first product that really got Apple going as a business. The first mass-produced computer by the company in 1977, the Apple II (pictured) succeeded the Apple I, which was not a success. Steve Wozniak was the brains behind its technical implementation, but Jobs saw the importance of having a design that was approachable to everyone, not just computer nerds.

The Apple II also established Apple's method of success. It wasn't the first personal computer on the market or even the first from Apple, but it was an ideal combination of features and design that worked extremely well and was better than anything else on the market. It worked so well (fave.co/2YjYuAE) that Apple sold the Apple II line for more than 15 years.

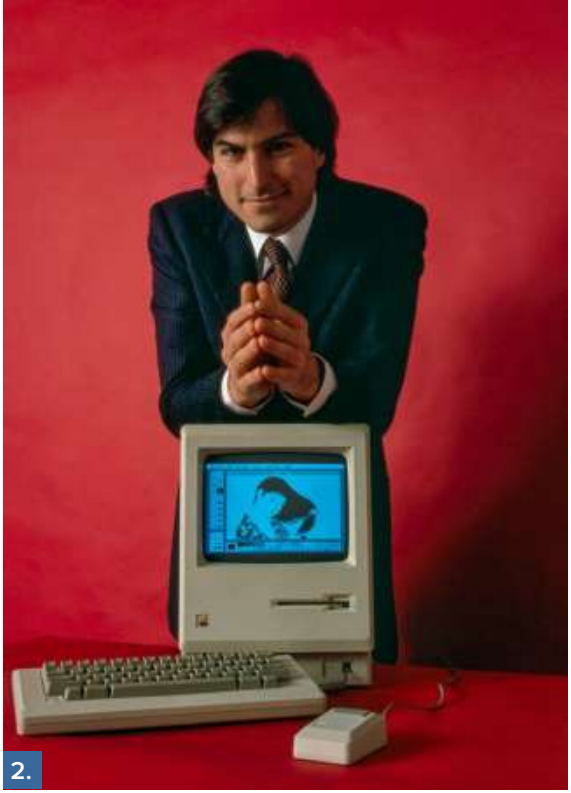


1.

2. MACINTOSH

The making of the Mac (fave.co/2YjZ3dK) has been widely covered, so here's a quick overview. Apple was riding on the success of the Apple II, but it needed to work on its eventual successor. Apple had two GUI platforms in development that could follow up the Apple II: Lisa and the Macintosh. After being forced out of the Lisa project, Jobs went to work on the Mac team. Lisa failed, and, well, if you don't know the rest, you can figure it out.

Some may argue that, if you consider the dominance of Windows PCs, the Mac was only a modest success. But every major product Apple has released



2.

has its roots in the original Mac. Apple—and possibly the entire PC industry—wouldn't be where it is today without it.

3. MAC OS X

It's not the first version of the Macintosh operating system, but Mac OS X is the most important version (fave.co/31SAuD7). It came at a time when the current operating system, MacOS 9, was out of date, and Apple desperately needed a modern version. After several stops and starts, Apple started looking outside its doors to find what it needed—and hit pay dirt.

Years earlier, Steve Jobs had left Apple to start a new company called NeXT. It wasn't a mainstream success on the level of Apple, but it got people's attention, particularly with its object-oriented NeXTSTEP operating system. So when Apple started shopping for a new OS, it was hard to ignore Jobs' company. In 1997, Apple bought NeXT, bringing Jobs back to a leadership role and setting the foundation for the transformation of both Apple and the Mac.

OS X wasn't important just for Mac hardware. When Apple released the iPhone, it proudly proclaimed that its operating system was based on OS X. It's a testament to Steve's genius and legacy, and the fuel that makes Apple hardware run.

3.

4. iPOD

The late 1990s saw the emergence of digital music and the MP3 player. While numerous players were on the market, Jobs thought Apple could make a better one, and the company released its first non-Mac product since the Newton called iPod in 2001. A product that the company originally thought would be a nice complement (fave.co/3AgpP3V) to its Macs, the iPod sold in the millions and carried Apple's growth right up until the iPhone arrived in 2007.

The iPod also had a major influence on Apple's product development, since it was the first hub device that demonstrated tight integration between a device (iPod), software (iTunes), and an online service (iTunes Music Store). That integration is key with the iPhone, iPad, Apple Watch, and Mac, and no doubt it'll be part of whatever Apple comes up with in the future.

5. iPHONE

You're probably quite familiar with the iPhone's origins (fave.co/3uYdYXv), so we won't dive into its history other than to say it's Apple's single most groundbreaking product, even more than the Mac. It's not just the most important product made under Steve Jobs, it's Apple's most important product ever and one of the most significant tech products of all time. Yes, the iPhone stands on the shoulders of the other products in this list, but it has created its own legacy and dramatically changed the landscape. Years from now, when we eventually move beyond phones as our primary devices, the iPhone will be the basis for the future, cementing Steve Jobs' legacy long after the products he designed are in the history books.

4.

5.

ONE MORE THING

While Steve will always be remembered for the devices he brought into the world, it was his showmanship that perhaps made the biggest impact. The products were always great, but it's his introductions that will always be remembered: pulling the MacBook Air out of an envelope, the iMac rising out of the stage, removing the iPad nano from his jeans pocket, and of course, all of those One More Things (fave.co/3iwSqvZ). But what stands out the most is the iPhone keynote. When Steve took the stage at Macworld San Francisco in January 2007, the world had no idea that everything was about to change. But Steve knew. That keynote was nothing less than a masterpiece on the level of Queen at Wembley Stadium (fave.co/3Bin4jV) or Led Zeppelin at Royal Albert Hall (fave.co/2YoKPrT). Apple events are still must-see TV, but nothing will ever compare to Steve's command of the stage, the crowd, and the next big thing. ■

You can now get a Touch ID Magic Keyboard for your M1 Mac

But only in silver.

BY MICHAEL SIMON

It's been a long wait since Apple first unveiled the new Magic Keyboard with Touch ID for the 24-inch iMac (fave.co/3fKg4E1), but if you've been itching to get your hands on one, now you can.

After releasing it with little fanfare in Apple's online shop in early August, Apple is now selling the Magic Keyboard with Touch ID for $149 (fave.co/3uAKUVA) and the Magic Keyboard with Touch ID and Numeric Keyboard for $179 (fave.co/3mjKX4A). The models are the same ones that Apple offers with the 24-inch iMac, which Apple offers as an upgrade for $50 and $80, but they only come in a single color: silver.

The keyboard is the same as the standard version with a Touch ID sensor in place of the eject button at the right end of the function row. However, if you want one

IMAGE: APPLE

Apple is also selling “new” versions of the Magic Mouse…

you’ll need an M1 Mac. While Apple has offered Touch ID on Intel MacBooks built into the keyboard, the M1 chip in the latest laptops features a Secure Enclave integrated into the system on chip. Intel Macs, on the other hand, use a T2 coprocessor to handle security, which is likely the reason for the lack of support.

In our testing of the new keyboard (fave.co/3AvlV7y), we found that Touch ID works just as well as it does on Apple’s MacBooks. Apple previously allowed the iMac keyboard to be paired with any M1 MacBook.

In addition to the Touch ID keyboards, Apple is also selling “new” versions of the Magic Mouse (fave.co/3Daubvn) and Magic Trackpad (fave.co/3ivw7Xs), though it appears that the only thing that’s different is the cable. Apple previously sold the devices with a standard Lightning to USB-A Cable but now they come with a woven Lightning to USB-C Cable. Of note, Apple has also removed the numbers from the devices, which were both identified with the number “2” in their name. The prices of the Magic Mouse and Magic Trackpad remain unchanged at $79 and $129, respectively. ■

…and the Magic Trackpad.

Four simple macOS tips that will turn you into a power user

Transform your workflow with these easy settings and tweaks.

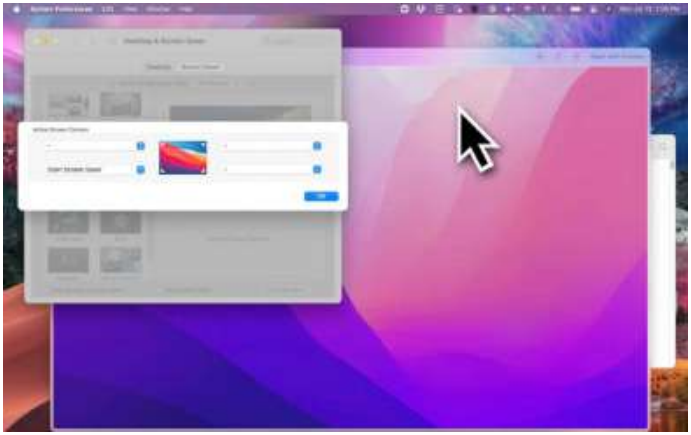
BY MICHAEL SIMON

We write lots of complicated how-tos and in-depth buying guides here at *Macworld*, but sometimes we just want to quickly tell you about our favorite tricks and tips that take mere seconds to use but will save you lots of time and frustration.

1. SHAKE TO FIND YOUR CURSOR

If you've ever lost your mouse in a sea of windows and spent tens of seconds trying to find it, you'll wonder where this trick has been your whole life. Go to the Accessibility pane in System Preferences, then Display, and finally Cursor. Make sure

IMAGE: OLIA-DANILEVICH/PEXELS

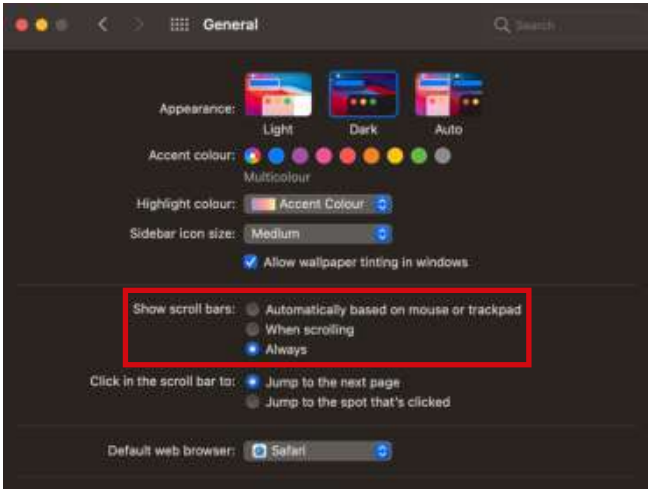


Ticking the “Shake mouse pointer to locate” checkbox will ensure you never lose the cursor.

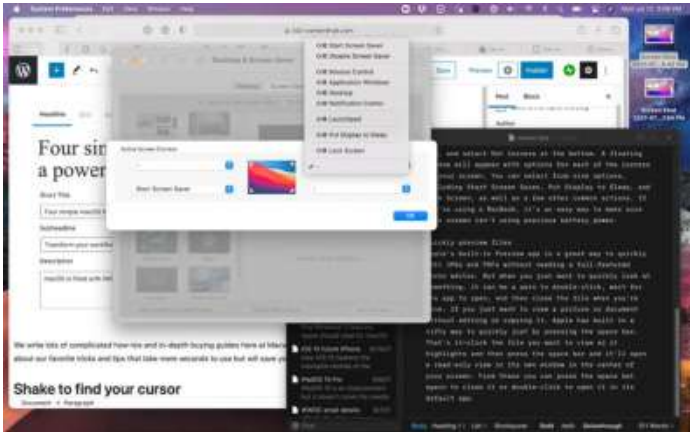
the “Shake mouse pointer to locate” checkbox is selected. Now you’ll be able to quickly move your mouse or your finger over the trackpad for a second or two to briefly enlarge your cursor so you can quickly spot it.

2. BRING THE SCROLL BARS BACK

A few generations ago, Apple decided to clean up the interface by removing the scroll bars from the right edge of windows. They magically appear and disappear when you start scrolling, but if you want to quickly grab a scroll bar and move to a specific point in a browser or document, it’s tricky and not very intuitive. But you can turn them back on. Head over to the General pane in System Preferences and you’ll see an Always option under the “Show scroll bars” section. It may look weird at first if you’ve been living without them for a while, but you’ll get over that the first time you instinctively grab a scroll bar and swiftly move through a lengthy webpage.



To bring back scroll bars, go to System Preferences ➜ General, then tick the Always option under the “Show scroll bars” section.



Hot Corners in macOS lets you apply a variety of actions when you move your cursor into one of the corners of your screen.

3. USE YOUR CORNERS

Mac veterans know all about the usefulness of Hot Corners, but if you're new to the Mac, you might not have stumbled upon the feature yet. To find it, go to the Desktop & Screen Saver pane in System Preferences, click on the Screen Saver tab, and select Hot Corners at the bottom. A pop-up window will appear with drop-down menus for each of the corners of your screen. You can select from nine options, including Start Screen Saver, Put Display to Sleep, and Lock Screen, as well as a few other common actions. (If you're using an external display, the corners will shift to that display.) It's especially useful if you're using a MacBook—set a corner to start the screen saver or sleep, and you've got an easy way to make sure your screen isn't using precious battery power.

4. QUICKLY PREVIEW FILES

Apple's built-in Preview app is a great way to quickly edit JPEGs and PDFs without needing a full-featured photo editor. But when you just want to quickly look at something, it can be a pain to double-click, wait for the app to open, and then close the file when you're done. If you just want to view a picture or document without editing or copying it, Apple has built a nifty way to get there quickly just by pressing the space bar. That's all there is to do—click and highlight the file you want to view, and then press the space bar to open a read-only view in its own window in the center of your screen. From there you can press the space bar again to close it or triple-click to open the file in its default app. And that's not all: The space-bar preview function works in other ways than just previewing files. For example, if you select a drive icon and press the space bar, you can see information on the amount of storage the drive has. Try it on any icon and see what happens. ■

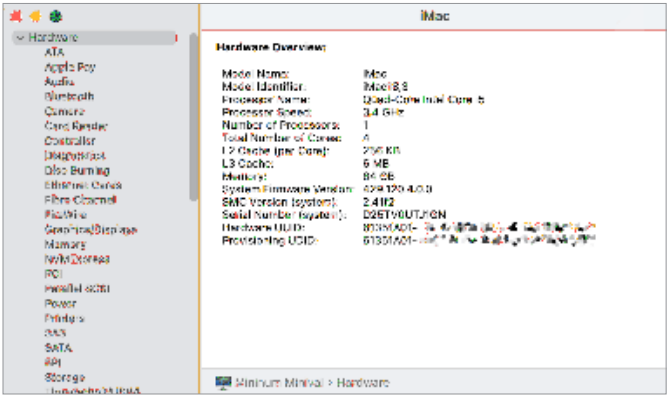
What Mac do you have? Here's how to find out

Apple's lack of assigned model numbers can get frustrating quickly when you're trying to understand your hardware and upgrade options, but you can find out what you've got.

BY GLENN FLEISHMAN

Readers often write in to ask which model Mac they own. This lets them understand which features are built in and whether their model qualifies for certain upgrade or connection options. With iMac owners, that's often whether the iMac is of the right vintage (fave.co/3a4jmi8; 2009 to early 2014) to act as an external monitor for another Mac via Target Display Mode.

Apple has several ways of identifying a Mac, each of which is found in a different



The System Information app offers lots of details about your Mac as a unique item and as a model.

location or by another method. Most items are found in About This Mac (→ About This Mac) or System Information (hold down Option and choose → System Information). Other details may require using a web-based lookup, consulting a web page, or looking at the tiny print on your Mac on the back or underside.

Here's how to find your Mac model.

SERIAL NUMBER

Every Mac has a serial number that uniquely defines it. It's shown in About This Mac's main screen and in the Hardware Overview in System Information.

Your serial number helps you obtain warranty service. You can use the serial number in the AppleCare coverage lookup page (fave.co/2WCtTOb) on Apple's site to also find out the human-readable model name described next. The serial number is also printed on nearly all Macs (on an iMac, it can be on the underside of its stand) and available via the Apple ID site (fave.co/3gQFlNb) for devices registered to your account.

MODEL NAME

About This Mac's first line of detail tells you

About This Mac provides the human-readable model information along with the serial number and other salient hardware items.

the model number; within parentheses, macOS offers other details; Apple calls this “Tech Specs” on its site (as shown on this page on identifying MacBook models, fave.co/3ivphkE), but nowhere else. My iMac shows up as “iMac (Retina 5K, 27-inch, 2017).” That’s usually enough information to find out from third-party sites that offer instructions on upgrades or repairs what parts or tools you need. It also conforms to how Apple often lists models that qualify for the latest version of macOS and for extended warranties (such as replacing a keyboard in a laptop). Oddly, the Apple ID site doesn’t list the complete model information—only the general details, like “iMac 27" 5K”. (The type of memory required is also listed, like “64 GB 2400 MHz DDR4”—useful if you have a Mac that supports adding third-party memory.)

MODEL IDENTIFIER

It’s sometimes helpful to find the “shorthand” number that concisely describes your Mac. Use System Information for that. The Hardware Overview that appears by default in the main screen of System Information shows the Model Identifier in the second line. Mine appears as “iMac18,3” with no spaces.

MARKETING PART NUMBER

Apple assigns a part number to its devices that can define the country for which it manufactured a particular configuration of hardware or a combination of characteristics, like the difference between a space-gray and a gold MacBook Air. This number is printed on a Mac and on the packaging that came with it. It looks like MGND3LL/A (a 13-inch M1-based 2020 MacBook Air in gold).

MODEL NUMBER

If that’s not enough, Apple also assigns a model number to its Macs. This number may be used for a single edition of Macs based on CPU and other factors or might span a dozen or more distinct versions of model line. EveryMac offers insight on this topic (fave.co/3FhCDeg)—essentially that it’s impossible to know what Apple’s choices here mean. Model numbers (sometimes called “family numbers”) look like A2179. They’re printed on your Mac. ■

2017
MacBook (Retina, 12-inch, 2017)
Colors: Rose gold, space gray, gold, silver
Model Identifier: MacBook10,1
Part Numbers: MNYF2XX/A, MNYG2XX/A, MNYH2XX/A, MNYJ2XX/A, MNYK2XX/A, MNYL2XX/A, MNYM2XX/A, MNYN2XX/A
Tech Specs: MacBook (Retina, 12-inch, 2017)

Apple has a list of MacBook models on its website.

ad COUNCIL
American Lung Association.
My kid would never vape.
More than 5 million American kids vape.
Which means, they're being set up for a lifetime of addiction.
Good students. Athletes.
Kids who'd never smoke regular cigarettes.
All types of kids.
Maybe even yours.
Talk to your kid about vaping. Start by getting the facts at
TalkAboutVaping.org
GET YOUR HEAD OUT OF THE CLOUD

DOCK/PORT HUB

WD_BLACK D50: A FAST THUNDERBOLT 3 DOCK WITH INTERNAL STORAGE

BY JON L. JACOBI

If there's any reason to complain about modern MacBooks (especially the new M1-based models), it's the dearth of integrated ports. For all but the lightest-duty use, getting a dock to increase the connectivity options borders on necessity.

While WD markets the Black_D50 reviewed here as a Thunderbolt 3 "gaming" dock, and the styling might not be aimed at Mac traditionalists (a gross understatement), it's an exceptionally capable dock, increasing the number of ports and providing very fast NVMe storage.

DESIGN AND FEATURES

The D50 is a squarish box measuring 4.72 inches high by 4.72 inches deep, and 2.17 inches wide. It's a powered (required)

IMAGE: WD

dock, so you can use it with Apple's Thunderbolt 1/2 to Thunderbolt 3 adapter. As to said power, the D50 has a rather prodigiously sized 180 watt/19.5-volt brick, which is not shown or mentioned on the product page—it measures approximately 6 inches long, just under 3 inches wide, and slightly less than an inch thick. It's also a bit weighty at around 10 ounces.

The size of the dock and of the power brick means you'll want to leave the D50 on your desk and not drag it with you on the road, unless it's a cross-country trip with plenty of room in your car's trunk.

The D50 is a squarish box measuring 4.72 inches high by 4.72 inches deep, and 2.17 inches wide.

The D50 is styled in WD's pseudo sci-fi or military theme for its Black series. It's designed to attract gamers, but the look isn't so over the top that it's a turnoff. Actually, ditch the lettering on the outside and it's far less SyFy—the RGB lighting at the bottom might be a bit much (I like it for the fun factor), but you can turn that off or change it to a number of different schemes and colors.

Alas, the WD Dashboard software that allows you to control the lighting is for Windows only. If that makes you sigh and want to stop reading this review, I understand. However, it might be your loss, because few people will have any complaints about the selection, number, and placement of ports on board the D50—or its internal NVMe storage. On the back, along with the AC adapter jack, you'll find two Thunderbolt 3 ports (one fully powered for charging your laptop, and so forth), a full-size DisplayPort 1.4 port, a gigabit ethernet port, two USB Type-A ports, and a USB Type-C port. All the USB ports are Gen 2, 10Mbps. That means you can get about 1GBps of throughput from external storage with any of them.

The lack of 2.5Gbps

The front of the WD Black D50 lying on its side, its most stable position.

ethernet is a bit of a disappointment, and you might even bemoan the lack of 10Gbps ethernet, but I find that I rarely need that kind of speed. Also, 10Gbps ethernet sucks a lot of power and produces a lot of heat, while 2.5Gbps transfers at over 300MBps using older Cat 5e cables, and runs far cooler.

WD didn't forget about convenience. On the front of the unit, you'll find both 10Gbps Type-A and Type-C USB ports, as well as a 3.5-mm audio in/out jack for headphones and headsets. Last but not least, there's an internal NVMe SSD that's capable of transferring data at around 3GBps. The $449 unit I tested features a 1TB WD SN730 inside, but you can up that to a 2TB SN730 for $599. (I never said the D50 was cheap.) It would be nice if WD sold the D50 unpopulated so you could leverage an existing drive, but hey, drive mechanisms are what WD does.

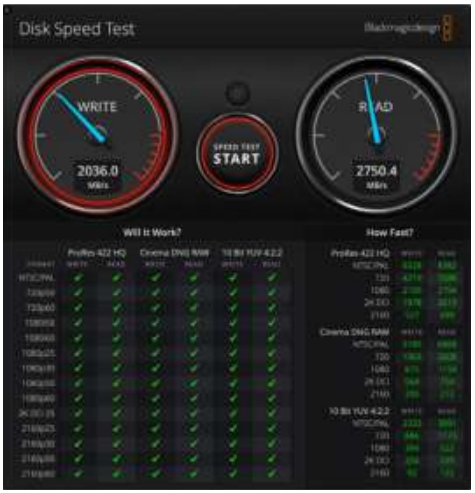
The back of the Black D50 dock has plenty of ports, including three 10Gbps USB ports.

PERFORMANCE

I tested the D50 on both a 2015 Core i7 (Skylake) 27-inch iMac and a new M1 Mac mini. The former used the aforementioned Apple Thunderbolt 1/2 to Thunderbolt 3 adapter, and the latter used one of the two native Thunderbolt 3 ports. I tested both the D50's internal SSD and a Samsung X5 (fave.co/3A9qXqa) attached to the second Thunderbolt port.

I also checked the gigabit ethernet and DisplayPort output (with an HDMI adapter), as well as using the second Thunderbolt port to drive the LG 24MD4KL-B Ultrafine display (fave.co/2ZLn3XS) attached to the M1 Mac mini. All the ports worked as they should. Below you can see the SN730's performance on the M1 Mac mini.

Note that in a fit of inspiration (and necessity), I tried installing Windows via Boot Camp to the D50. It didn't pan out, with the actual Windows install taking a hike after copying the install files to the install partition. In fact, the D50 caused problems with reboots during the Windows install process even when it was to other drives. I was finally able to install Windows 10 to an internal drive without the D50 attached. I'm not saying it's impossible to run Windows off the D50, but I didn't have the time or patience to sort it out for this review.



The WD SN730 NVMe SSD inside the D50 delivers very good performance on a Mac M1 mini. It should deliver the same performance on just about any Thunderbolt 3 Mac.

Obviously, Thunderbolt 2 was the performance-limiting factor on my older 2015 iMac, but this result is nothing to sniff at. Seek times are still very NVMe-like.

Above is the D50/SN730's performance on my older 2015 Core i7 iMac. Obviously the older Thunderbolt 2 and Apple adapter were limiting factors, but I'll take that kind of performance any day. I'm running the aforementioned Windows installation off an internal SATA drive (550MBps, with slower seeks), and it's more than fine—not quite as snappy as macOS running off the internal NVMe SSD, but close enough.

The size of the dock and the size of the power brick means you'll want to leave the D50 on your desk.

The external Samsung X5 read at around 2600MBps and wrote at approximately 1600MBps via Thunderbolt. I also tested several USB 10Gbps drives that performed appropriately and averaged around 900MBps reading and 800MBps writing. These were just ad hoc tests to make sure the ports were the speed WD claimed. Bottom line, the D50's internal storage is quite fast, and its ports perform as advertised.

WD_Black D50

PROS

- Adds extra USB 10Gbps ports.
- Charges laptops.
- Fast NVMe storage.

CONS

- Pricey.
- Not particularly Mac-like in appearance.

PRICE

$449

COMPANY

WD

BOTTOM LINE

Though I'd appreciate faster 2.5Gbps ethernet and perhaps two more Thunderbolt 3 ports (as with OWC's Thunderbolt Dock [fave.co/3DbuuWI]), I found the WD_Black D50 a marvelous adjunct for my computers. As a matter of fact, it's my favorite so far thanks to the internal storage—a very nice dock from WD that fills the bill and perhaps provides a little fun. If you can't live with the clash in styles...c'est la vie. ■

ANTIVIRUS SOFTWARE

BULLGUARD ANTIVIRUS FOR MAC: PROTECTION THAT FEELS LIKE AN AFTERTHOUGHT

BY IAN PAUL

It's often surprising how different and basic a Mac antivirus product can be compared to its Windows counterpart. Perhaps it's because the comparative market size doesn't merit the same level of development time, or just that macOS users don't flock to antivirus products the way Windows users do.

Whatever the reason, one look at Bullguard's antivirus product and the immediate impression you'll come away with is, "That's it?"

Before diving deep into this, a note: Bullguard was recently acquired by Avira. A few months before that, Avira itself was snapped up by NortonLifeLock. In other

IMAGE: BULLGUARD

words, Bullguard is now owned by a subsidiary of Norton, and that may translate into a complete overhaul of Bullguard at some point. Then again, with three different antivirus brands under one roof, you have to wonder how long all of these different products will last.

BASIC PROTECTION

Bullguard for Mac is unbelievably simple—perhaps too simple. The primary window consists of a green checkmark that says whether your Mac is safe, and then there's a scanning panel, a real-time protection panel, a quarantine panel underneath that, and links to support and your account right at the bottom.

Click on Custom Scan and a Finder window appears letting you choose a folder to scan. Otherwise, clicking the scan button starts a full scan. If you select the Settings cog in the upper right corner, it opens a preferences window with very straightforward (and minimal) settings for the antivirus. This window also contains the quarantine and application logs.

As for protection, we had to rely on our own tests as Bullguard hasn't had its Mac product tested by the antivirus reports we track. On the Windows side, however, Bullguard is doing very well. It scored 100 percent and 99.2 percent from AV-Test in January and February 2021 (fave.co/2ZLHOTg), respectively, for its zero-day tests. It also scored 100 percent in AV-test's widespread and prevalent malware test during the same period. AV-Comparatives and SE Labs haven't tested Bullguard for Windows in recent months.

In my own spot check of common malware for Mac, Bullguard had no trouble identifying the samples and quarantining them as soon as they were unzipped.

With that basic test out of the way, we went hunting for live malware and ran across a fake Flash installer on a torrenting website. After downloading the fake Flash DMG Bullguard spotted and wiped out some live malware right away. However, I was still able to install the phony Flash program.

Admittedly, this scenario is already questionable, because to get to this

point you have to first authorize your Mac to install software that isn't signed by the developer. Then you have to be naive enough to trust that all the malware that was just spotted by the antivirus didn't come from the file you just downloaded. Then you have to ignore a number of other warnings from the OS before finally installing the questionable program.

With so many roadblocks thrown up along the way, it's reasonable to assume most users wouldn't get this far. Still, I pressed on to see what would happen, and it uncovered a problem.

After the "Flash" install was complete I carried out a full scan to see what we had, and Bullguard detected four threats. That's excellent. What wasn't excellent, however, was that Bullguard didn't take any action against these threats. On top of that, despite the scan window showing four detected threats, the primary window continued to show a green checkmark stating that the Mac was safe.

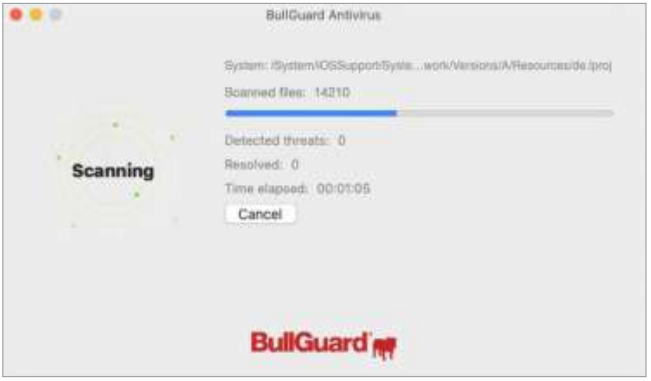
SUPPORT WASN'T MUCH HELP

With four infections and exactly zero user-facing details about what to do with this infection, my next move was to click the Support link and get some help via chat from the company.

That didn't work out, so I searched for the email support address to get help that way. After two emails and a day and a half, Bullguard got back to me. The company's support staff advised me to download and install EtreCheck, a free Mac diagnostic scanner, and then send the company the resulting report.

I did so and while I waited for Bullguard to respond, I noticed that EtreCheck showed the exact location of the problematic files. I promptly deleted them using the command line (malicious files often don't show up in Finder), ran a scan, and was still stuck with one problematic file somewhere on the machine.

After another few scans and some of my own troubleshooting, I was able to find the problematic file that Bullguard kept flagging. Trouble was, it was already in the antivirus program's quarantine section.



Why it continued to flag it as problematic, I don't know.

During this whole ordeal, Bullguard support wasn't much help other than advising me to use EtreCheck. The actual resolution came about because I knew what to look for and where thanks to EtreCheck. Meanwhile, Bullguard's customer service was offering very basic advice such as disabling browser plugins and running more full scans.

BullGuard Settings
General
Antivirus
Quarantine
Logs
Updates
Check for updates automatically every
2 hours
Antivirus
Suspected files will be moved to quarantine
Scan inside archives
Archive size limit
5 MB
Don't scan the Time Machine drive
It is safe to exclude your backup from scanning: any infected files that you restore will be automatically detected by BullGuard for Mac. Malicious files from your backups cannot be removed because OS X protects your Time Machine drive.

This was ultimately a very simple problem with some basic but annoying adware stuck on the machine. The files may or may not have been a threat depending on which window you chose to believe. But a lot of these problems could have been avoided. Bullguard antivirus for Mac, at the very least, should have been able to tell me where the troublesome files were or how to remove them. Also, advising users to employ a third-party program to troubleshoot such a basic problem is not the best sign.

Bullguard Antivirus for Mac costs $24.99 per year for a single device. It can also be added to your machines as part of Bullguard Internet Security, which covers 3 devices for a year for $60, or Bullguard Premium Protection, which covers 10 devices for a year for $99.

BOTTOM LINE

Bullguard for Mac is very basic, to the point that this protection feels like an afterthought. If the Macs in your life are also an afterthought and most of your home is running Windows, then adding Bullguard to your Mac because you have an extra license is worth it for protection against mainstream threats.

If, however, you have a houseful of Mac users looking to invest in an antivirus suite, there are better options available right now. ■

Bullguard

PROS

- Able to identify common Mac malware.

CONS

- Mac implementation feels like an afterthought.
- Unhelpful support.
- Spots problems but doesn't offer any tools or advice on what to do.

PRICE

$24.99

COMPANY

Bullguard

Hot Stuff

What we're raving about this month

AMAZON ASTRO

amazon.com

Amazon's two-wheeled robot features an Alexa-powered smart display, a camera mounted to a periscope, and enough computer vision, sensors, and artificial intelligence to interact with people and autonomously patrol your home. Astro reacts to voices with movement and simple facial expressions via cartoon-style eyes. Astro uses simultaneous localization and mapping technology to navigate a home's interior in the same way that higher-end robot vacuums do. Amazon says this will help it adapt to a home's changing environment, enabling it to respond to obstacles that might not have been in its way the last time it passed through an area. The robot can also detect hazards to itself, such as stairs, and it can automatically brake if a pet or an object moves in front of it.**–MICHAEL BROWN**

Marshall Motif ANC

marshallheadphones.com

Best known for the amplifiers it markets to the rock-and-roll industry, Marshall partners with Zound Industries to create the Motif ANC earphone with a sealed-fit design, active noise cancellation, and transparency mode. An ingress protection rating of IPX5 guards against jets of water, but they are not rated for protection from particulate matter. Touch controls provide music and phone-call control. Each earbud should provide 4.5 hours of active use, and a wireless portable charging case promises to extend that to 20 hours on a single charge.–**MICHAEL BROWN**

Hot Stuff

WYZE CAM PAN V2

wyze.com

This auto-tracking security camera offers color night vision that can record color images up to 29.6 feet away even in very dark (0.1 lux) environments, and its six IR illuminators are invisible to the naked eye. Its “mini-siren” is designed to scare off intruders, and you can sound the siren manually via the Wyze app, or it can be triggered through automations. Other features include two-way audio, the ability to detect smoke or carbon monoxide alarms, local video storage on a microSD card (not included), and free rolling 14-day cloud storage of event videos up to 12 seconds long. You also get smart home integrations for Alexa, Google Assistant, and IFTTT.—**BEN PATTERSON**

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autism speaks®

“ALL OF THE THINGS I JUST FOUND TOO HARD TO SAY”

LAUREN JAUREGUI //
TRACK 03

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USE THEM TO START A CONVERSATION WITH YOUR KIDS ABOUT EMOTIONAL WELLBEING. LISTEN TO THE ALBUM, FIND TOOLS AND GET TIPS FROM PROFESSIONALS AT

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iPhone 13 and iPad mini benchmarks don't tell whole story

Benchmarks of Apple's newest devices reveal a different kind of chip.

BY JASON SNELL

In September, Apple announced the new A15 processor in a peculiar way: by comparing its new chip to the Android competition, rather than the A14 that powered last year's generation of iPhones. We were all left to try to infer the speed of the A15 (fave.co/3D1Z7xU) based on Apple's claims, wondering if the company was obscuring the performance improvements in the A15 because they weren't particularly impressive.

Recently things have gotten a lot clearer with the first reviews of the iPhone 13 (fave.co/3uBYnwt) and iPhone 13 Pro (fave.co/3FjwcHm), as well as a look at what the iPad mini (fave.co/3mgIV4U) has to offer. Now we've got the cold, hard facts about the A15—and it's more complicated

IMAGE: APPLE

and interesting than I guessed last week. The net result? Apple is making one chip but using it in three different ways, and while some aspects of the A15 upgrade aren't particularly exciting, others are quite impressive. Systems on chips made at a scale of 5 nanometers are complicated. Who knew?

THE A15 IS A PRODUCT LINE

It turns out that while the iPhone 13, iPhone 13 Pro, and iPad mini are all powered by the A15, each of them is using the A15 in a different way. The A15s in all four iPhone 13 and 13 Pro models are running at 3.23GHz, but the A15 in the iPad mini is underclocked to 2.93GHz. The A15s in the iPhone 13 Pro and iPad mini have five graphics cores, but the A15 in the iPhone 13 has only four.

Just as Apple is showing how many variants on its chip architecture it can produce (whatever is powering the rumored MacBook Pro models expected this fall, it'll be something we've never seen before), it's increasing how it varies its chip usage on iOS. Since Apple never comments on these things, we're left to speculate, but my guess is that some combination of chip yields and individual device design needs have led it to deploy its single A15 chip in three different configurations on those three devices.

This is very like Apple. Viewed one way, the company is outrageously extravagant, making an entirely new chip design every single year that is only ever used in Apple products! The decadence! But viewed another way, the company is using all parts of the buffalo: One core chip design is deployed in different variations across its product line, with fewer GPUs here, a lower clock speed here, and in a variant scaled up with more cores for higher-end systems over here.

The new iPad mini uses an A15 processor like the iPhone 13, but it is underclocked and has one fewer GPU.

Since the new MacBook Pro models are rumored to have slipped from a planned summer introduction, it's likely they'll be

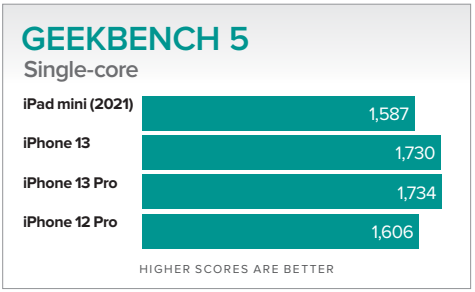
based on the A14 design that also powers the M1 processor, which is why I expect they'll be called something like M1X. But the A15 is here now, and I'd expect it to be scaled up to power an M2 processor in 2022's lower-end Macs and iPad Pro models, as well as a scaled-up M2X processor for higher-end offerings.

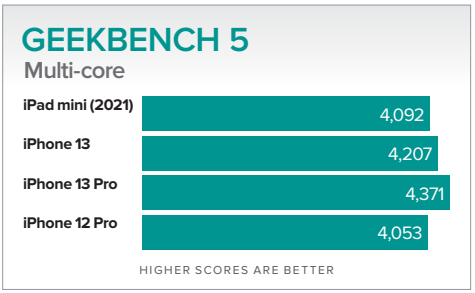
Apple's bespoke chip design may be extravagant in the moment, but by the time the company is done with a design, it's wrung every last bit of efficiency out of it.

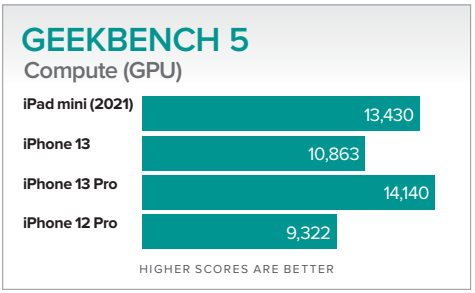
THE REAL GAINS IN THE A15

Let's get down to it. While the A15 is faster than I had feared, it's definitely a smaller upgrade than what we've seen in the last few years. While the last four processor upgrades averaged a 20 percent speed boost in single-core performance, on my scorecard the A15 is only about 11 percent faster than the A14. And in multi-core performance, the speed gains are even more meager—about 4 percent, compared to average gains of around 22 percent every year for the past three.

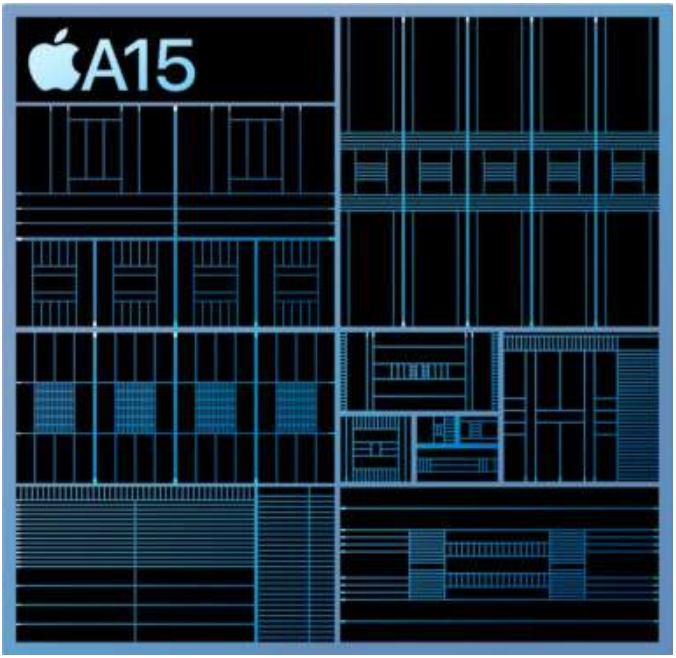
But there are benefits to the A15 that go beyond the CPU core speed. First off, the graphics processor in the A15 is a big upgrade. The iPhone 13 Pro scored 50 percent better than the iPhone 12 Pro in GPU-based tests, and even the reduced four-core GPU in the iPhone 13 offered a 16 percent speed boost.







And of course, there's the improved battery life. It's probably impossible to pick apart all the reasons that the iPhone 13 line made a big leap forward in terms of battery life—from the Pro models and their variable-refresh display to new cellular modems and bigger batteries—but I've got to think that the A15 is also



The A15 is a smaller upgrade than what we've seen in the past few years.

making a contribution to the improved energy savings.

EYES ON THE PRIZE

Over the last few years, Apple's chip engineers have spoiled us. The incremental gains they've made on raw CPU core performance were impressive, and this year's gains just don't quite measure up to that standard.

But as I keep saying, things are more complicated than that. Most tech upgrades are not on an annual basis, so those gains compound, and so a year that's a little slower paced gets washed into years that were more impressive, and boom, your new phone is twice as fast as your old one. The CPU cores are also not the sole component of device speed. There are GPUs, the Neural Engine, and even media encoders and decoders that can contribute to overall performances. Apple has made considerable strides in those areas lately.

Finally, there's the bigger picture: Apple's chip operation started by making an iPhone chip. Then it made a more-cores variant for the iPad. Then it updated that more-cores variant so that it would also run macOS. It's about to release an even-more-cores variant to serve the needs of professional Mac users. And the much, much higher-end needs of Mac Pro users will also need to be addressed.

There's just a lot more going on. The A15 is only the start of that story. I'm looking forward to seeing what the next year brings. ■

The rumor mill got a lot wrong about Apple's iPhone 13 event

There were quite a few swings and misses.

BY MICHAEL SIMON

Every time Apple holds an event, we pretty much know exactly what it's going to release. If you've been keeping up with the rumor mill for the weeks and months prior to the big day, the actual keynote is like watching a show you've already seen and waiting for your favorite scenes to come along.

But that wasn't the case with the "California Streaming" event (fave.co/3mmniAq). While the rumor mill got many things right, it also whiffed on major predictions, more than with any other recent event. For every correct guess—such as the iPhone 13's bigger battery and the Apple Watch's larger screen—there was a big miss. Here's what the rumormongers got wrong.

IMAGE: APPLE

AIRPODS DIDN'T MAKE AN APPEARANCE

Perhaps the biggest miss of the day was the lack of an AirPods announcement. It feels like new AirPods have been rumored for every event since the iPhone 11, but nearly everyone agreed that they would finally show up alongside the iPhone 13. That didn't happen, and in fact, Apple didn't even mention the AirPods.

THE iPHONE 13 DOESN'T HAVE ANY SATELLITE CAPABILITIES

This rumor popped up a couple of weeks ago from Ming-Chi Kuo (fave.co/3a79WSI) and gained traction after a bit of confirmation by Mark Gurman: The iPhone 13 was expected to include low-earth satellite capabilities that would let the phone make calls and send texts when cellular service wasn't available due to the inclusion of a new custom 5G modem. Alas, it didn't come to pass, though at least Gurman cautioned that the feature almost certainly wouldn't show up until next year and would be for basic emergency information and not phone calls.

THE iPHONE 13 DOESN'T HAVE AN ALWAYS-ON DISPLAY

We've been hearing rumblings about an always-on display (fave.co/3Fkluke) coming to the iPhone for years, and it seemed likely that the iPhone 13 was the model that was actually going to deliver it. We've seen renders, rumors, and leaks from prominent analysts including Gurman and Max Weinbach, but nary a mention of the feature made it to the keynote. Maybe it'll show up in the iPhone 14.

THE APPLE WATCH DIDN'T GET A "FLAT" DESIGN

Another seemingly solid rumor was a new design for the Apple Watch. Months ago, Jon Prosser reported (fave.co/3BbK2cD) on a flatter design for Apple's wearable with sharper corners to match the iPhone, which Gurman recently echoed. While the Series 7 Watch did get a larger screen as

The iPhone 13 has some new features, but satellite connectivity isn't one of them.

predicted, the shape is still very much a squircle—and there's nothing flat about it.

THE APPLE WATCH SERIES 7 DOESN'T HAVE A LONGER BATTERY LIFE

Apple hasn't launched its tech specs page for the Apple Watch Series 7 yet, but if it had, you'd see this written in the Power section: up to 18 hours. Reports leading up to the event were adamant that the Apple Watch would have a bigger battery, with Weinbach claiming (fave.co/3FrjKpp) it would see its "first real battery life improvement" since its launch. While Apple touted the new Apple Watch's beefed-up charging capabilities, it said nothing about battery life during the event.

THE iPAD MINI DOESN'T HAVE A SMART CONNECTOR

The launch of the iPad mini at the "California Streaming" event was a surprise in itself, but the rumor mill accurately predicted most of the features of Apple's new tablet. Except one. After a report by Prosser (fave.co/3D8ah4c), 9to5Mac also predicted the iPad mini would "feature a magnetic Smart Connector similar to the iPad Air and iPad Pro," but that didn't come

The Apple Watch Series 7 has faster charging but the same battery life.

to fruition. Apple instead released a new Smart Folio case in a few colors, but the only thing that attaches magnetically is the second-gen Apple Pencil.

THE APPLE WATCH DOESN'T HAVE A NEW PROCESSOR

One of the biggest rumors about the new Apple Watch was the new processor that was supposed to be faster and smaller with a new double-sided manufacturing process (fave.co/3midJCu) to free up space for a bigger battery and other health components. Apple didn't even discuss the chip during yesterday's product announcement, and it isn't mentioned on the Apple Watch Series 7 page—because it's the same S6 system in package as in the Series 6.

There are new colors for everything—just not the ones we expected.

THE COLOR PREDICTIONS WERE WAY OFF

New colors were a big part of yesterday's keynote, but the ones we expected—iPad mini matching the iPad Air, Sunset Gold, Bronze, and matte black—were way off. The color of the year is Starlight, which is either off-white or very pale gold, depending on how you look at it. And the others were wrong too: The Pro has a new Sierra Blue color, the 13 gets a new shade of blue along with Midnight, the iPad mini now comes in purple, and the Apple Watch got an olive-green hue, none of which were predicted.

THE iPAD MINI GOT A MAJOR PRICE HIKE

With a couple of exceptions, the rumors about the iPad mini were basically on the money, bringing an all-screen design, USB-C, and Apple Pencil 2 support. But what no one expected was a 25 percent price hike. The mini now costs $499, a whopping $100 jump over the price of the previous model. ■

The iPad mini is now a lot more expensive.

The iPhone's Lightning port isn't going anywhere, no matter what the EU says

The European Commission is looking to make USB-C standard, but that decision won't affect iPhones for many years.

BY MICHAEL SIMON

Scrolling through your newsfeed lately, you may have seen headlines related to the European Commission's new proposal to force smartphones and small electronic devices to use USB-C for charging. The headline likely included Apple or iPhone, because a tech-related story is much more interesting when it involves the biggest company in the world.

On the surface, it would seem that the EC's proposal (fave.co/3a8iybU) is targeted

IMAGE: IDG

directly at Apple. Under the terms of the proposal, "USB-C will become the standard port for all smartphones, tablets, cameras, headphones, portable speakers and handheld videogame consoles" in the interest of convenience and e-waste, and the sale of chargers will be "unbundled" from the sale of electronic devices.

Apple already complied with half of the proposal when it stopped including chargers with the iPhone 12 (fave.co/3otksMG). At the same time, it switched from USB-A to USB-C for its iPhone chargers (fave.co/2Yj3fdC), making one end of the charger universal. It also now includes a Lightning-to-USB-C cable in all new iPhone and iPad boxes. Apple took a bit of heat for removing a necessary accessory from the iPhone box, but everyone quickly got over it and now other phone makers are following Apple's lead.

But if you expect Apple to start including a USB-C to USB-C charging cable with the next iPhone as it does with iPads and Mac, you're going to be disappointed. The reality is, Lightning is not going anywhere. Not with the iPhone 14 or the iPhone 15 or the iPhone 16—unless Apple already has plans to swap it out.

Ever since the iPad switched from Lightning to USB-C with the "all-screen" update in October 2018, there has been speculation that the iPhone will follow suit. Sometimes the rumors are that it will get USB-C, other times that it will rely solely on wireless charging, but with each new model, the tiny port remains. And it'll stay that way regardless of what the EU does.

LIGHTNING CRASHES

As 2022 rolls around, the number of Lightning devices is shrinking, Other than accessories and earbuds—Magic Mouse and Trackpad, and AirPods, which aren't included in the proposal—only the iPhone (fave.co/3D7oUEI) and ninth-gen iPad (fave.co/3a8iV6i) have Lightning ports for charging. And Apple is already moving beyond Lightning for charging. Last year, it introduced MagSafe, which is something of a proprietary wireless charging method. And of course, iPhones have supported industry-standard Qi wireless charging for years.

The Lightning port has been around for a while and it's not leaving anytime soon.

MagSafe is the future of iPhone charging.

But even if they didn't, and even if the EU passes the proposal, it will still be years before Apple would theoretically be forced to comply. For one, the proposal needs to go through the usual bureaucratic process, which involves debate by Parliament and national governments. Then member states may suggest amendments to the proposal, which need to be individually considered and approved by the EC. There will be debate and pushback, and there are valid arguments to be made on both sides. On the one hand, a standard charging solution would definitely be more convenient; on the other, it all but eliminates the possibility that something better than USB-C could come along. And of course, it would force millions of Lightning cables into landfills.

But let's say that happens before the end of 2022 as the EC "hopes," according to the BBC (fave.co/3a8iybU), and the proposal becomes an official directive. Then each individual state will have two years to enact a national law and manufacturers will have another two years to comply with the law. That likely means the earliest Apple product that falls under the law would be the iPhone 18 in 2026. And as we know, the wheels of bureaucracy often turn very, very slowly.

By then, Apple will likely have moved beyond Lightning and cables for the iPhone. The rumors of a portless iPhone (fave.co/3AckZ83) certainly come from somewhere, and I have no doubt that Apple does indeed have an iPhone in the works that doesn't have a physical charging port at all, and five years seems like plenty of time to deliver it. After all, five years ago, most models still had a headphone jack.

So don't fret about those headlines. USB-C makes sense on the iPad for things like file transfers and external displays. I wouldn't be opposed to USB-C on the iPad, but the port is equally versatile on the iPhone, just in very different ways. So all those MiFi (fave.co/3owjkrF) Lightning cables and accessories aren't going anywhere. And by the time Apple moves on, it won't be because it's forced, it'll be because it's ready. ■

Buyer beware: ‘MagSafe compatible’ is not the same as ‘Made for MagSafe’

Anybody can throw a ring of magnets on a charger, but real MagSafe is more than that.

BY JASON CROSS

One of the iPhone 12’s most interesting new features is MagSafe (fave.co/3oGlcwG)—a ring of magnets, an NFC antenna, and wireless charging at rates up to 15W. It can enable a whole new ecosystem of accessories (fave.co/3iynBXC), including cases, wallets, stands, car mounts, and more.

Lately, I’ve been seeing a lot of third-party accessories marketed as “MagSafe compatible,” and you should know that this

IMAGE: AARON YOO

is *not* the same as an officially licensed MagSafe accessory, which Apple calls "Made for MagSafe." Some of these chargers, wallets, and mounts may work perfectly well, but you should know what you're buying, and "MagSafe Compatible" is not MagSafe.

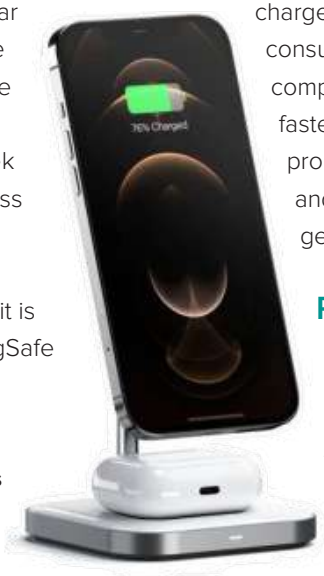
The MagSafe ecosystem of accessories includes cases, wallets, and stands.

'MAGSAFE COMPATIBLE' IS USUALLY JUST MAGNETS

There's nothing Apple can do to prevent an accessory maker from throwing a ring of magnets on their wireless charger, battery pack, case, stand, or car mount. That's what most of the accessories billed as "MagSafe compatible" are.

Take, for example, the sleek Satechi 2-in-1 Magnetic Wireless Charging Stand (fave.co/3BhGiGs). While it doesn't feature MagSafe in the name, it is often promoted as being "MagSafe compatible." Indeed, the stand exclusively uses magnets to hold up your iPhone 12, with or without a MagSafe case on it.

That's fine, but look more closely: The stand has a maximum charging rate of 7.5 watts, just like all other non-MagSafe wireless chargers. Real MagSafe chargers can go up to 15 watts. A consumer who sees "MagSafe compatible" might expect the faster charging rate that Apple promotes as a MagSafe feature and wonder why they're not getting it.



Satechi's 2-in-1 Magentic Wireless Charging Stand looks great, but it's not really MagSafe.

REAL MAGSAFE DOES MORE

Real MagSafe devices combine a ring of magnets to securely attach your iPhone together with a single-wire NFC antenna

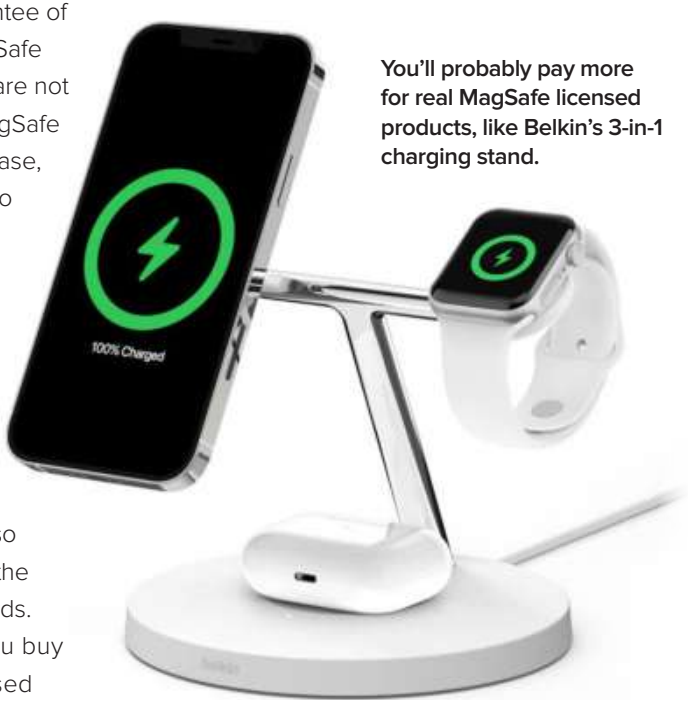
that allows the iPhone to identify the device. Currently, that's not used for much other than a simple color-matched animation when you attach a MagSafe case. But in the future, it could allow your iPhone to behave differently when certain devices are attached.

Most notably, when your iPhone recognizes a legit MagSafe charging attachment, it can crank up the charging rate to 15 watts. A regular charging stand or car mount with a ring of magnets in it will not be recognized as "MagSafe" by your iPhone, and will max out at half the speed: 7.5 watts.

There's also no guarantee of interoperability with "MagSafe compatible" devices that are not official Apple-licensed MagSafe accessories. A MagSafe case, for example, is designed to allow you to attach other MagSafe devices to it, and MagSafe chargers are designed to worth through MagSafe cases. A MagSafe wallet needs to not only attach via magnets but have its insides shielded so that they don't mess with the magnetic strip on your cards.

The point is, when you buy an actual MagSafe licensed accessory, such as Belkin's 3-in-1 Wireless Charger (fave.co/3a5vSxR), you know what you're getting. When you buy something that simply says it is "MagSafe compatible," you can be almost assured it will not charge at 15 watts, and it may run into issues working with other MagSafe products. There's no harm in buying unofficial "MagSafe compatible" devices, so long as you know what you're in for.

If you want to buy a real MagSafe compatible product, check out our guide to the best MagSafe accessories (fave.co/3iynBXC). ■



You'll probably pay more for real MagSafe licensed products, like Belkin's 3-in-1 charging stand.

Reports claim future iPhones may be able to detect depression, cognitive decline

Apple is reportedly researching new algorithms for the iPhone.

BY ROMAN LOYOLA

While rumors about future health and fitness features usually pertain to the Apple Watch, a report in *The Wall Street Journal* (fave.co/3l8sUyS) says Apple is looking to expand the iPhone's role as well. Sources and documents seen by the *Journal* say Apple is developing iPhone features that could help diagnose depression and cognitive decline.

Apple is reportedly investigating whether the data collected for mobility,

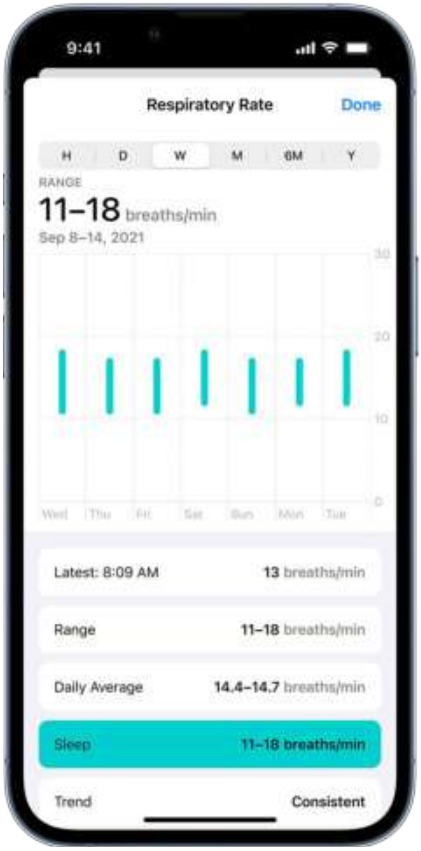
IMAGE: YAKOBCHUK VIACHESLAV/SHUTTERSTOCK

physical activity, sleep patterns, typing behavior, and more can be used to find patterns that are associated with mental health conditions and create algorithms to detect them. In a project called "Seabreeze," Apple is working with UCLA to study anxiety, depression, and stress. Another project called "Pi" with Biogen is studying cognitive development.

The Wall Street Journal also reports that Apple has an undisclosed project with Duke University to help detect childhood autism. According to the *Journal*'s sources, the research "looks at using the iPhone's camera to observe how young children focus, how often they sway back and forth, and other measures."

The *Journal* cautions that these research projects are in their early stages, and it's possible Apple may find that the result does not lead to new iPhone features. However, Apple is reportedly "excited" about the possibilities of the research and how it may help find treatment in an era where rates of depression and other mental conditions are rising.

The report notes that privacy issues could come up. Stressing user privacy has been a priority for Apple, and if the company does develop algorithms, they will likely work on the iPhone without sending data to Apple's servers. ■



Apple is looking at how sleep, for example, can be used to find patterns associated with mental health conditions.

AM I OKAY TO DRIVE?

BUZZED DRIVING IS DRUNK DRIVING

NHTSA

ad COUNCIL

REVIEW: iPHONE

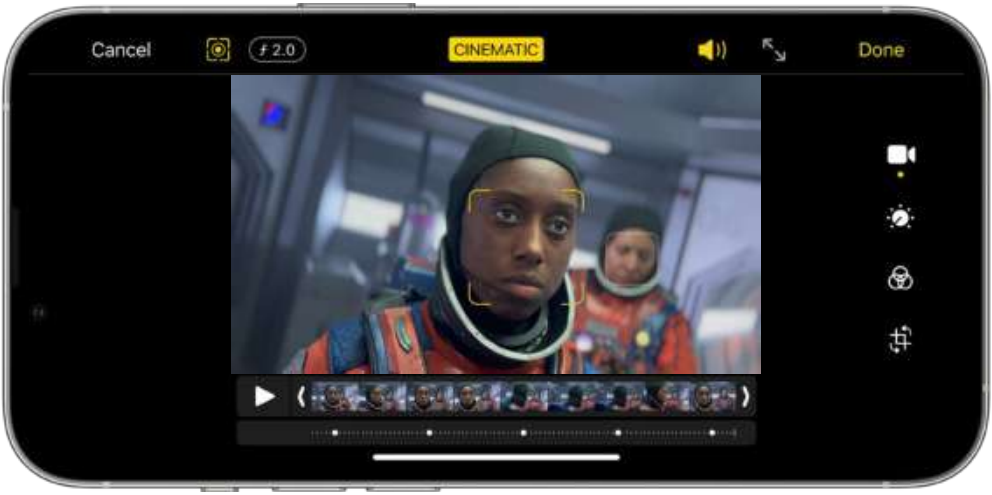
AN OBVIOUS UPDATE, BUT

13 PRO

NOT A MINOR ONE

NONE OF THE iPHONE 13 PRO'S IMPROVEMENTS ARE SURPRISING, BUT THEY STILL MANAGE TO IMPRESS.

BY JASON CROSS



Macworld EDITORS' CHOICE

Early in the 2021 iPhone rumor cycle, it was reported that Apple might call this year's offering the iPhone 12s. Previous "S" model iPhones —such as the iPhone 6s and iPhone Xs—generally kept the same design and features as the previous year's model, incorporating a faster processor, a better camera, and a single standout new feature.

Though Apple didn't go with the iPhone 12s name, it may have been a fitting moniker, at least where the Pro models are concerned. The iPhone 13 Pro is essentially the iPhone 12 Pro with a faster processor, better camera, and one big standout feature (ProMotion).

But to treat the iPhone 13 Pro so reductively is to do it a disservice. The scale of improvements here is noteworthy, and the gap between Pro and non-Pro models is significant. This is essentially the iPhone 12 Pro with ProMotion, a better camera system, faster performance, and better battery life. That's not a surprising or particularly innovative set of improvements, but it still adds up to one hell of a nice iPhone.

VIDEO: **iPHONE 13 PRO REVIEW**
Watch now at fave.co/3avslJf

REFINED DESIGN

While the iPhone 13 Pro looks a lot like the iPhone 12 Pro at a glance and indeed is a sort of fraternal twin, there are differences. Some are subtle, others jump right out at you.

The iPhone 13 Pro and Pro Max have

almost exactly the same physical dimensions as the iPhone 12 Pro models they replace. These are heavy phones, just as their predecessors were—a natural side effect of the stainless steel frame.

Not much has changed when it comes to durability, not that we're complaining. The iPhone 13 Pro still carries IP68 water and dust resistance rating and is rated for up to 30 minutes at a depth of six meters. It's got the same Ceramic Shield front glass, too.

The silver, graphite, and gold colors from last year return, but Pacific Blue has been replaced with Sierra Blue, a much lighter shade that looks nice enough, though I prefer last year's darker hue.

While USB-C is creeping its way into all of Apple's other products—it's now the only port available on MacBooks, the M1 iMac, iPad Pros, the iPad Air, and the iPad mini—the company still refuses to move the iPhone line to this more universal plug (fave.co/2WOr8td). If you have a bunch of Apple gear, you have Lightning *and* USB-C charging cables. And for no good reason, really. Come on, Apple. It's time.

Speaking of charging, there's not much new there. You still get a USB-C to Lightning cable in the box but you don't get a power adapter or headphones. Charging performance is unchanged: You get up to 50 percent charge in 30 minutes with a 20W USB-C adapter.

Storage options still start at 128GB, with options for 256GB, 512GB, and now a new 1TB option. That's an obscene amount of storage for a phone and really only worthwhile if you think you're going to shoot a lot of videos (especially in ProRes format).

Sierra Blue is a lot brighter than Pacific Blue, and just look at that huge camera bump!

The design changes you will notice right away are the smaller notch and much bigger camera module. The rear camera area is dramatically larger and sticks out further, to the point where you might not actually be able to put your phone on *some* stands or car mounts without a case that makes the camera bump sit flush. Note that most of Apple's first-party cases do not!

The notch on the front where the speaker and TrueDepth sensors reside is now 20 percent narrower, which is nice, but the extra screen space is going entirely to waste. You don't get any additional icons or information in the status bar. Surely Apple *must* know that everyone wants the battery percentage back, right?

This year, the iPhone 13 Pro and Pro Max have exactly the same camera system and software features, so you don't have to buy the bigger one to get the better camera. This is the right approach, and we hope Apple continues it in the future.

PROMOTION FINALLY COMES TO iPHONE

The first thing you'll notice when you pick up an iPhone 13 Pro is just how smooth everything feels. Swipes, scrolls, interface animations…Apple was always good at this stuff, but the responsiveness and smoothness of the iPhone 13 Pro is on another level.

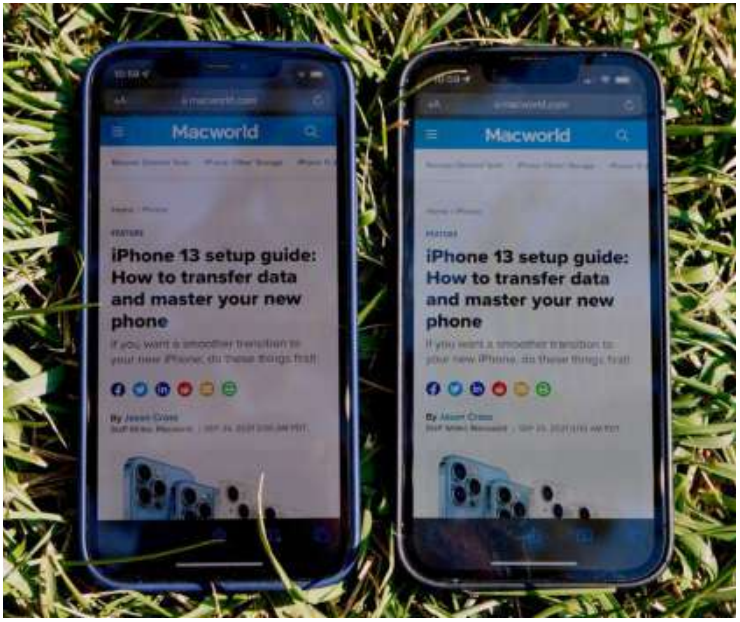
That's thanks to a new OLED display that is more power efficient and that includes ProMotion technology similar to that found on the iPad Pro. Rather than always refreshing at 60Hz, the display can go as low as 10Hz and as high as 120Hz.

The notch is smaller on the iPhone 13 Pro (right), but without changing the status bar to add back the battery percentage, what's the point?

There are no settings for this; the phone continually adjusts the display refresh based on the content on screen. Play back a 24fps

movie and the display will lock to 24Hz. Read static text and it'll drop to 10Hz. Start scrolling and swiping around and it'll ramp up to 120Hz.

Many apps that use standard iOS frameworks for scrolling and full-screen transitions will automatically take advantage of this, looking and feeling smoother as a result. Apps such as games will require an update to take advantage of ProMotion, and there are currently some limitations there that don't exist for iPad developers and will hopefully be dealt with in future software updates.


Macworld
iPhone 13 setup guide: How to transfer data and master your new phone
Macworld
iPhone 13 setup guide: How to transfer data and master your new phone

In bright sunlight, the brighter display of the iPhone 13 Pro (right) makes it easier to read.

The upshot of all this is that the display is smoother and faster when it matters most and more power efficient the rest of the time. This has an overall positive impact on battery life, which we'll get to later.

The display is brighter, too: It goes up to 1,000 nits in standard use, up from 800 on the iPhone 12 Pro (the max is still 1,200 nits for HDR content). We've had some very bright and hot days here in Sacramento lately, and you can clearly see the difference when you're out in direct sunlight. In other circumstances, the screen looks just like the excellent iPhone 12 Pro display.

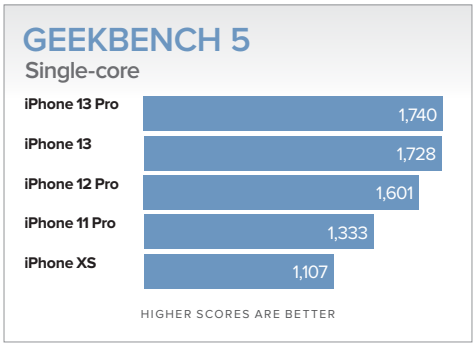
Enthusiasts have been begging for ProMotion on the iPhone ever since it landed on the iPad Pro four years ago. It's just as good as we've always expected, and a clear differentiator between the Pro and standard iPhone 13. Now it just needs to come to the MacBook Pro and iMac!

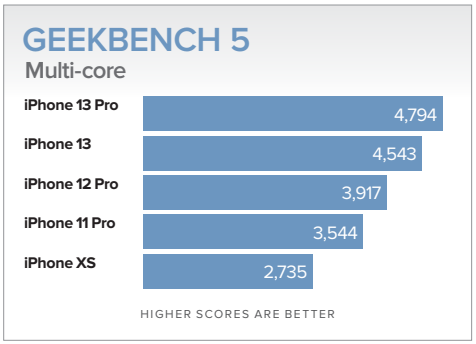
THE FASTEST SMARTPHONE MONEY CAN BUY

The A14 found in last year's iPhone 12 is faster than any processor found today in any Android smartphone. No Qualcomm Snapdragon or Samsung Exynos can come close to the performance of last year's best chip from Apple.

And now the A15 is faster—in some regards, much faster.

Like the A14, the A15 is made with a 5nm manufacturing process from TSMC, and it still sports two high-performance cores and four high-efficiency cores.



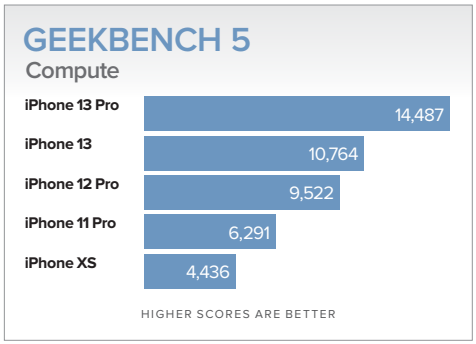


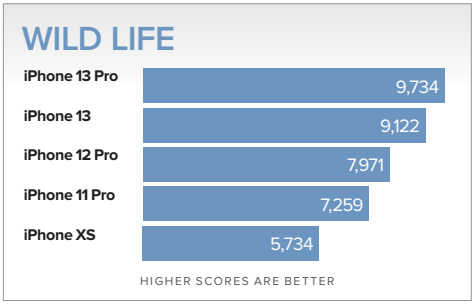
Nonetheless, in our benchmark tests, we found the A15 delivers about 8 to 10 percent faster single-core CPU performance, and 15 to 20 percent better multi-core CPU performance.

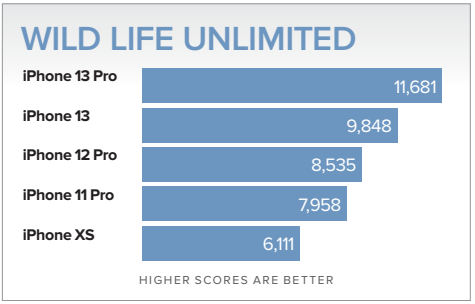
The GPU is where things get really interesting. In the iPhone 13 and iPhone 13 mini, the A15 still has a four-core GPU. In the iPhone 13 Pro and Pro Max, however, it's got a *fifth* core. That 25 percent increase in GPU cores makes it around 20 to 30 percent faster than the iPhone 13, and 40 to 50 percent faster than the iPhone 12 when it comes to 3D graphics and GPU compute tasks.

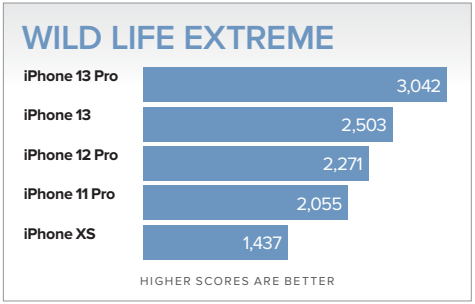
Put it another way: The A15 with a four-core GPU delivers performance around 10 to 15 percent higher than the four-core GPU in the A14, and the A15 with a fifth core is 20 to 30 percent faster than that. It really separates the iPhone 13 from the iPhone 13 Pro.

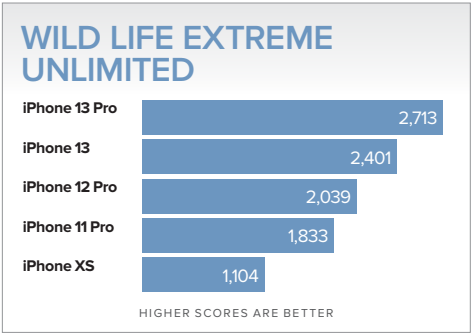
Apple has made other improvements, too. There are power efficiency tweaks











across the board, including in stuff like wireless radios. The image signal processor is upgraded, as is the video encoder and decoder (we hope it supports AV1). The Neural Engine has 16 cores, just like that in the A14, but it can do almost 16 trillion operations per second, up from 11 trillion.

Will you even notice all this speed? For most of the things you use your iPhone to do, no. When last year's processor was faster than the competition and this year's processor is even faster, what do you even do with that? Most people use their phones for web browsing, email, texting, and apps that essentially scroll lists of images and text (Twitter, Instagram, Facebook). A ProMotion display helps with all that, but a faster processor doesn't necessarily make much difference.

It will probably be a few years before the applications and iOS features that really push the A15 become commonplace. All this performance is as much about longevity as it is about making your life better today.

CRAZY-GOOD BATTERY LIFE

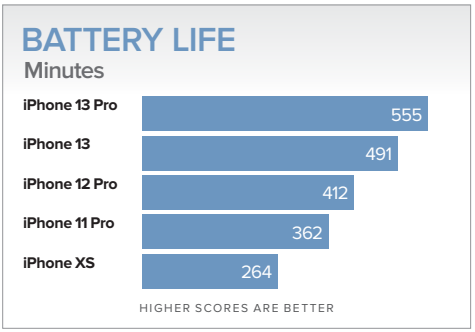
The case for more smartphone performance can sometimes be hard to

make. Millions of people use phones that are two or three years old and think they're plenty fast for everything they do. If they need a new phone, they're more concerned with affordability than with faster operation.

But ask anyone, anywhere, with any smartphone, if they want longer battery life, and the answer is yes. Yes, of course, yes, *always* yes. Consider, then, that the iPhone 13 Pro gives you both speed and longevity. It's fast enough to embarrass every other smartphone, and it lasts way longer than previous iPhones.

To start with, Apple simply put higher-capacity batteries in the entire iPhone 13 line. While the company doesn't disclose specifics, regulatory filings show that the iPhone 13 Pro has a battery with about 11 percent more capacity than the iPhone 12 Pro, and the iPhone 13 Pro Max's battery holds around 18 percent more charge.

The non-Pro iPhone 13 models have larger batteries as well, but they don't have the more efficient LPTO OLED display nor do they have ProMotion, which is a battery saver. Just as running the display at 120Hz eats through your battery life faster, running *below* 60Hz conserves it.



The results are phenomenal. We run our battery test with the display set to a constant 200 nits while looping the Geekbench 4 battery rundown test, which puts significant strain on the CPU and GPU. The iPhone 13 Pro lasted 9 hours, 15 minutes, an impressive 35 percent longer than the iPhone 12 Pro. It's even longer than the iPhone 12 Pro Max (8 hours, 41 minutes)!

My regular daily use has impressed me just as much as the benchmarks. At the point where my iPhone 12 Pro would hit 20 percent and flash the low battery warning, the iPhone 13 Pro often shows 40 percent or more remaining. It's extremely difficult to do an accurate comparison of real-world use, but I estimate that I'm getting about two hours more screen-on time.

If you're coming from an older iPhone, you're going to be *shocked* at how long the battery lasts. The iPhone 13 Pro is a big step up from the iPhone 12, but Apple has been steadily marching forward with battery life for years. The iPhone 13 Pro lasts about 50 percent longer than the iPhone 11, and twice as long as the iPhone Xs introduced just three years ago.

The iPhone 13's 3x telephoto (right) gets you a lot closer and produces more natural portraits.

A SIGNIFICANTLY BETTER CAMERA

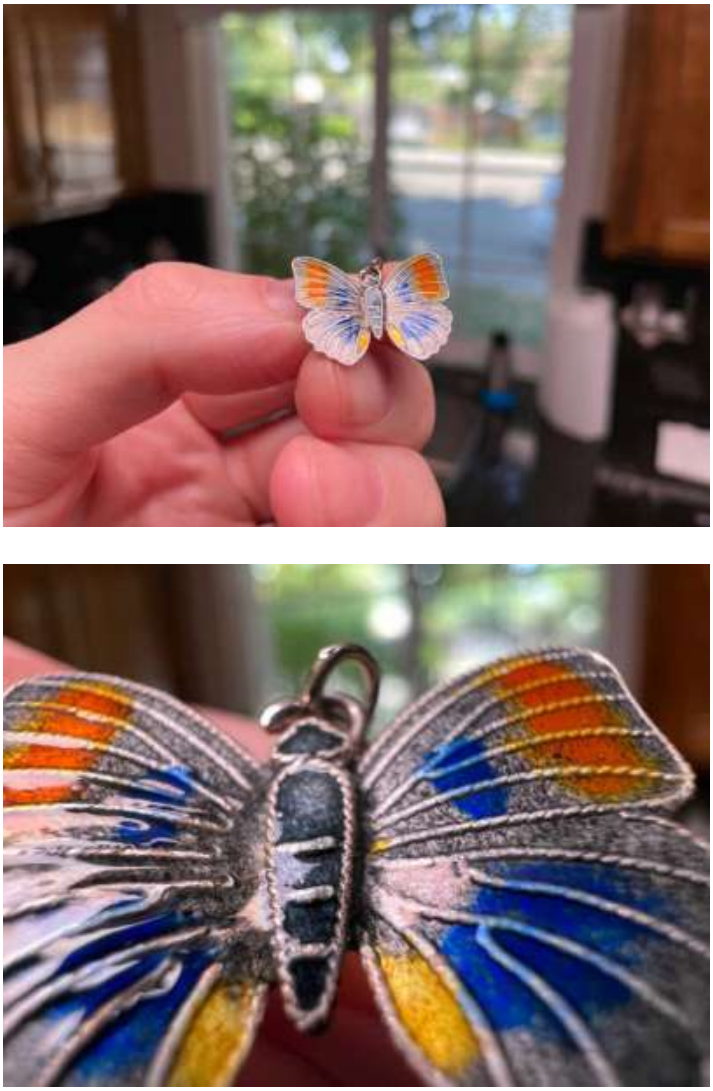
The iPhone 13 Pro has an improved camera system, because of course it does. Every new iPhone does. The iPhone 13 Pro brings significant improvements to both camera hardware and software processing.

On the hardware side, there are all new sensors. You'll notice the *huge* camera bump on the back, far larger than that on the iPhone 12 Pro. That's your first clue that things have changed a lot.

The telephoto camera has been increased from 2x to 3x, or an equivalent focal length of 77mm. That means the aperture narrows from f/2.0 to f/2.8 and you lose a bit of low-light performance, but it's a great change overall. It means better portraits with a nicer natural bokeh, rather than the fake bokeh of Portrait Mode on the iPhone 13. It gets you closer to distant subjects more naturally, without grainy digital zoom. And that slightly worse low-light performance is partially negated by the fact that you can now shoot Night Mode shots with the telephoto camera.

The "sweet spot" for professional portrait photography is generally in the 85-105mm focal length range, so this new

77mm 3x telephoto lens gets us much closer to that flattering perspective.



The minimum focus distance of the iPhone 12 Pro (top) doesn't come close to that of the iPhone 13 Pro (bottom).

The standard wide camera, where most people do most of their shooting, now has a much larger sensor. The resolution is still 12 megapixels, but the pixels are bigger at 1.9 microns and the aperture is a wider f/1.5. Apple says it captures 2.2x more light, and while I can't attest to that, I've noticed it does a better job with detail and color in low light and seems to sometimes take Night Mode shots more quickly.

The Ultra-Wide camera has a wider f/1.8 aperture and performs better in low light, but the real trick is how well it focuses up close for macro shots. Move any other iPhone closer than about 4 inches from your subject and it becomes a blurry mess, but the iPhone

13 Pro takes macro shots with ease. The minimum focal distance for the Ultra-Wide camera is only two centimeters, so you can push the camera right up close to that flower, bug, jewelry, or miniature.

The selfie camera is perfectly fine, but it hasn't really changed since the iPhone 11.

In Photo mode, the camera automatically shifts to Ultra-Wide when you get up close, while trying to maintain relative framing. Macro shots work in video too, even slo-mo, but you have to switch to Ultra-Wide manually.

Macro shots aren't a specific mode, just a natural capability of the Ultra-Wide camera, so there's nothing to set or enable (though Apple says it will add an option to manually switch it out in a future iOS 15 update). Just push your iPhone way up close and get detailed shots like never before. This is one of those things that tons of people will make use of, all the time. It was a big limitation of smartphones in general, and it requires no special knowledge or settings to use. It's also only on the iPhone 13 Pro models—the Ultra-Wide camera on the regular iPhone 13 doesn't have the super-tight focal distance.

For a few years now, the "Pro" model iPhones have been the only place to get a telephoto camera, which has been the main differentiator. But with the tighter 77mm zoom, the larger Wide sensor, and the Ultra-Wide's wider aperture and macro capability, the camera system on the

iPhone 13 Pro separates it even further from the iPhone 13.

Once again, the Pro models come with LiDAR and the non-Pro models don't. This helps AR apps perform better and provides quicker and more accurate autofocus in poor lighting conditions, plus enabled Portrait Mode and Night Mode at the same time. It's disappointing that Apple still hasn't done anything really impressive or groundbreaking with LiDAR yet.

The front camera has *not* changed. It's the same 12MP, f/2.2 selfie camera you'll find on the iPhone 12. You get the better image processing, you can use Photographic Styles, and you can shoot in Cinematic mode, but the hardware is the same.

NEW PHOTO AND VIDEO TRICKS

Photographic Styles? Cinematic mode? Yes, the improved image processor in the A15 enables better image processing (Apple calls it Smart HDR 4), but the iPhone 13 has picked up a couple of new software tricks as well.

Tap the little down arrow in the Camera app to show adjustment controls, and you'll find a new one: Photographic Styles. Swipe to change the style between Standard, Rich Contrast, Vibrant, Warm, and Cool styles. You can further customize the warmth and tone within each style.

Apple is careful to note that this isn't simply a filter. Instead of a constant change applied evenly to an entire image, the style is part of the complex computational photography steps that produce your final image from multiple exposures. It's applied differently to different parts of the scene, so a more vibrant style might make the sky bluer, but it won't create an unnatural cartoonish skin tone.

Just choose the one you like, tweak it to suit you, and it will be applied to all your images even after you close and reopen the Camera app. I think this is a feature everyone can appreciate. If you find the iPhone's camera produces cold and sterile whites, you can warm them up. If you like the punchier colors of Samsung's cameras, you can imitate that. You can create a "default" camera experience that suits you, with results that are more natural than those of a standard filter.

Cinematic mode is maybe less useful for your average iPhone user. It's a whole new video mode that shoots at 1080p and 30 frames per second in Dolby Vision HDR, and it requires a decent amount of light to work (you'll get a warning if you try to shoot where it's too dark). In this mode, the iPhone 13 will use artificial intelligence to identify the subject in your video and automatically perform "focus pulling."

That's a cinematic term for changing the focus throughout a shot to keep a subject in focus, or to switch focus between the foreground and background.

You don't have to inspect the iPhone 13 Pro to see how much bigger the camera array is.

It's such a common technique in film and TV that you probably don't even recognize it's happening. Cinematic mode does this automatically and works surprisingly well, and the metadata for the focal distance is saved with the video so you can go back in later to adjust focus targets as you edit.

Currently, Cinematic mode videos have to be edited on an iPhone, but support is coming to iMovie and Final Cut Pro later this year. And if you AirDrop the video or send it in an iMessage or whatever, your focus options will be baked into a standard video file format.

It's a fun mode to play around with, but the lack of support in third-party video-editing software and the limited resolution and frame rate make it more of a toy than a serious tool. It's going to be a big hit for TikTok stars and others who create smartphone-centric video designed for social media, but your average user is probably better off shooting regular video in 4K for now.

Both Photographic Styles and Cinematic mode are also found in the regular iPhone 13, but the iPhone 13 Pro does get one exclusive new video feature: the ability to shoot directly in the ProRes video format, after a software update later this year. ProRes is what's called an "intermediate format" meant for video editing, intended to preserve the best quality through the editing pipeline at the expense of huge file sizes. It's not meant as a way to actually consume or distribute video, so if you're not a video editor who already works in ProRes

you shouldn't concern yourself with it. ProRes will be limited to 4K at 30fps, except on the 128GB iPhone 13 Pro, where it will be limited to 1080p.

Shooting photos in the ProRAW format is still limited to the iPhone 13 Pro and Pro Max, just as it was limited to the iPhone 12 Pro models.

WIRELESS IS MORE OR LESS THE SAME

If you live in the U.S., you won't notice a significant change in wireless features or performance over the iPhone 12. The iPhone 13 line now supports additional 5G bands that are mostly of concern to those in other countries, and Apple says its wireless hardware is more power efficient.

But here in the U.S., you should get similar 5G support (sub–6 GHz and mmWave), Wi-Fi 6 throughput (not Wi-Fi 6E as rumored), Bluetooth 5, Ultra-Wideband, and NFC with reader mode.

WHAT DOES "PRO" EVEN MEAN ANYMORE?

I can't really tell what Apple means by "Pro" these days. The Mac Pro, iMac Pro, Pro Display XDR, and MacBook Pro seem aimed at actual professionals—those who use the device for the work they do and have specific performance and feature requirements. The AirPods Pro, on the other hand, are just the better AirPods. I don't think even Apple would claim they deliver the fidelity needed for professional audio work.

The iPhone Pro models lie somewhere in-between. A 1TB storage option is definitely a Pro feature, as is the ability to shoot ProRAW photos and ProRes video. Most consumers won't care about that stuff. On the other hand, everyone would appreciate features like the ProMotion display, especially since it improves battery life. Pros aren't the only ones who want a telephoto camera, and they *definitely* aren't the only ones who want to take macro photos.

Whatever meaning of "Pro" you ascribe to this particular Apple product, it's unsurprisingly the best iPhone yet and one of the best smartphones money can buy. We have nits to pick: It's time for the selfie camera to get an upgrade; Apple needs to embrace USB-C on iPhone; we still want an always-on display mode; and that enormous camera bump might cause minor issues with a few stands and mounts. But a product doesn't have to be flawless to be the best, and that's exactly what this is. ■

iPhone 13 Pro

PROS

- Blazing-fast speed.
- ProMotion on iPhone, finally!
- A huge leap in battery life.

CONS

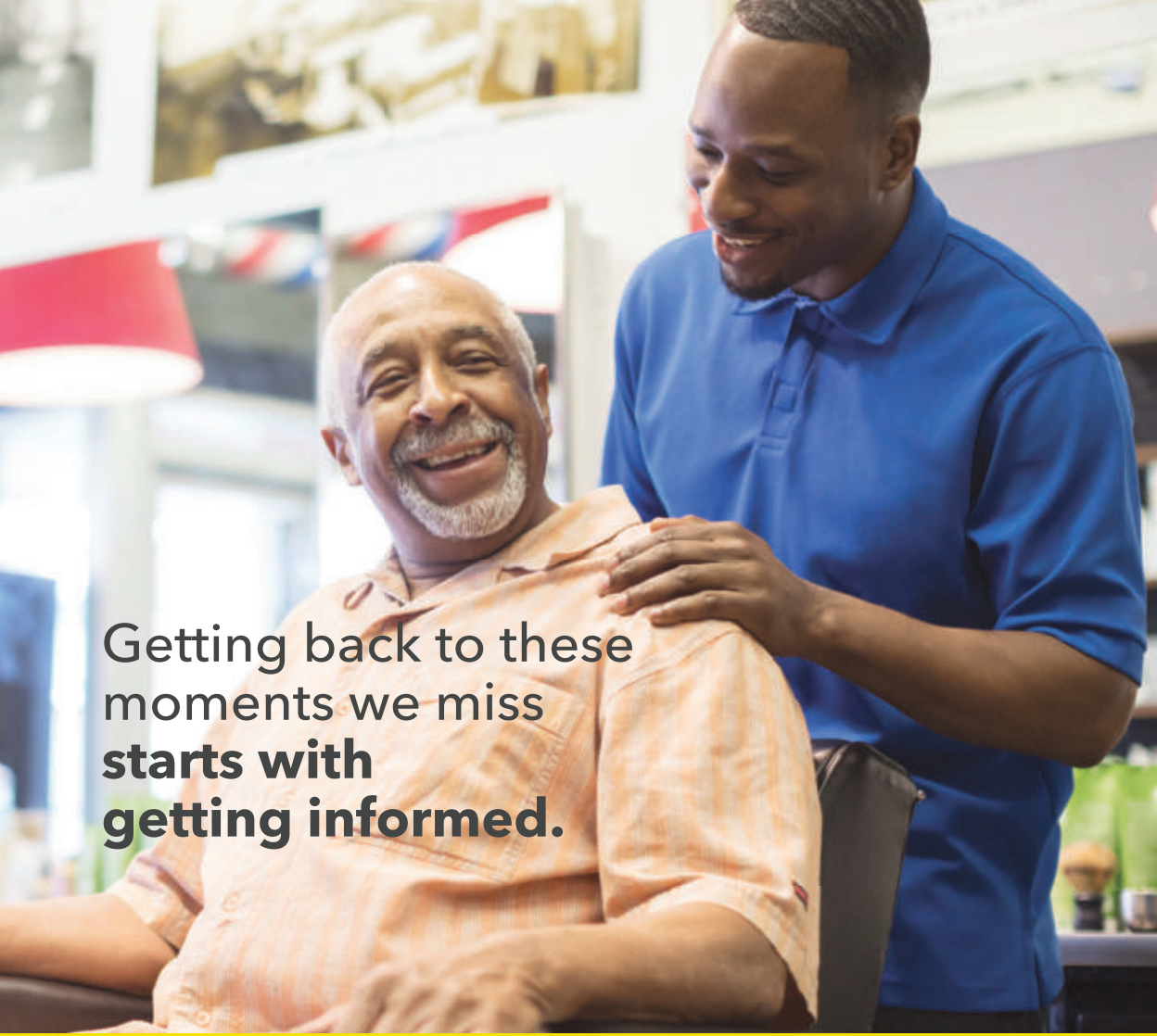
- No always-on display.
- No USB-C.
- Selfie camera is behind the times.

PRICE

$949 (base model)

COMPANY

Apple



IT'S UP TO YOU
COVID-19 VACCINATION

ad COUNCIL

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about COVID-19 vaccines at
GetVaccineAnswers.org

10 TIME-SA
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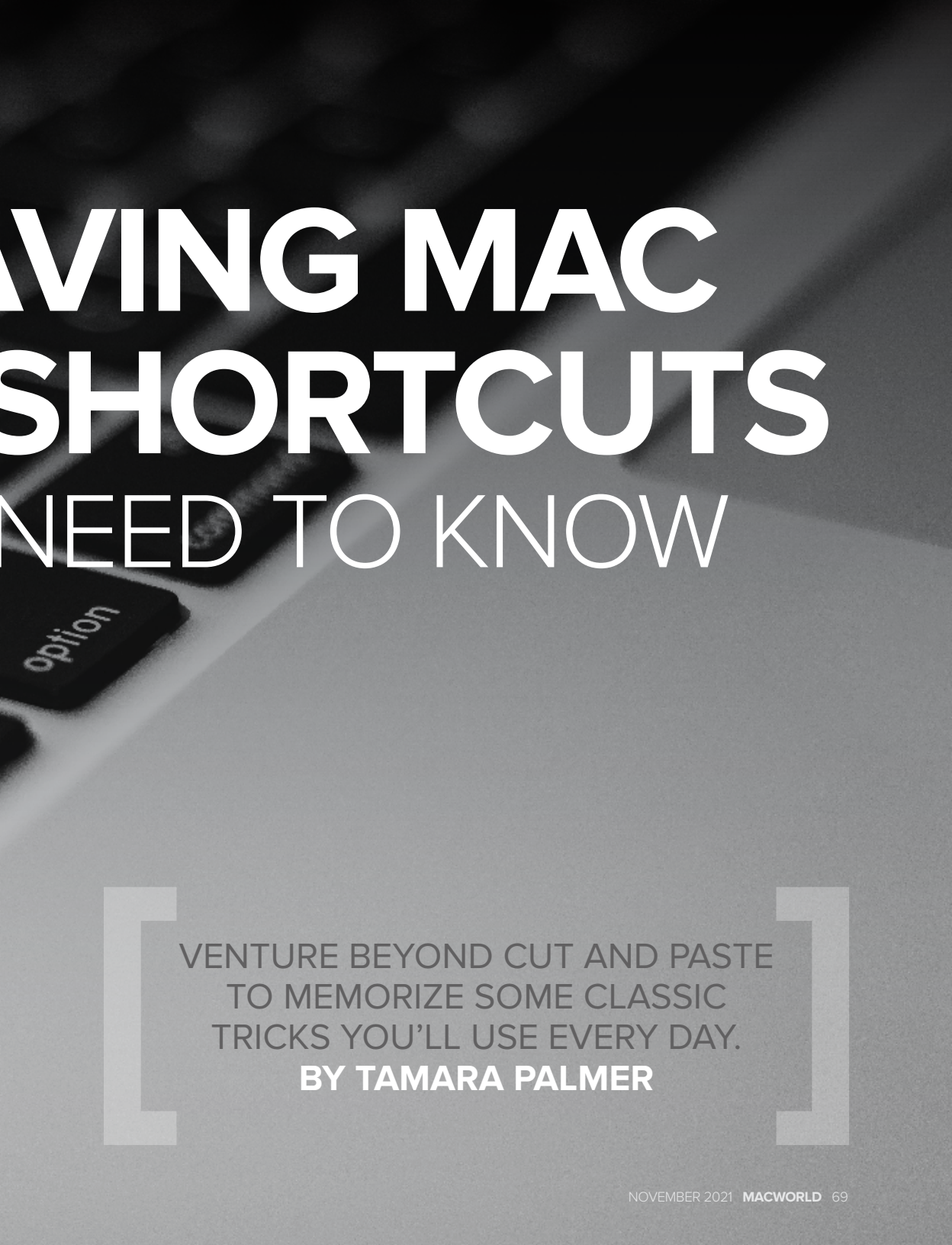


AVING MAC SHORTCUTS NEED TO KNOW

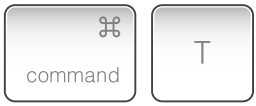
VENTURE BEYOND CUT AND PASTE TO MEMORIZE SOME CLASSIC TRICKS YOU'LL USE EVERY DAY.

BY TAMARA PALMER

You're undoubtedly accustomed to using two keys to copy and paste text as well as save your documents. Those keystrokes are so common they've become second nature. But in addition to those constant time-savers, there are many more easily memorizable and incredibly useful Mac keyboard shortcuts that can save you a lot of time. Here are 10 suggestions for the shortcuts that will make the most difference if you integrate them into your typing routine.

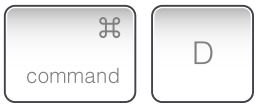
1. OPEN YET ANOTHER NEW TAB

App: Safari
Action: Open a new tab
Keystroke: ⌘-T



2. SEE DOUBLE (FILES)

App: Finder
Action: Duplicate a file
Keystroke: ⌘-D



3. FLOAT ON YOUR iCLOUD

App: Finder
Action: Open your iCloud Drive folder
Keystroke: Shift-⌘-I

4. TAKE OFF WITH AIRDROP

App: System
Action: AirDrop a file
Keystroke: Shift-⌘-R

5. GET SOME DIRECTION IN YOUR LIFE

App: System
Action: Search Help
Keystroke: Shift-⌘-?

6. HAVE A NEW FOLDER FRENZY

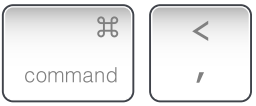
App: Finder
Action: Create a new folder
Keystroke: Shift-⌘-N

7. SKIM A DOCUMENT

App: Most documents
Action: Scroll quickly through a document
Keystroke: Function–Up Arrow or –Down Arrow

8. GET PREFERENCES ON DEMAND

App: System
Action: Open Preferences
Keystroke: ⌘-Comma (,)



9. MAKE FILES DISAPPEAR

App: Finder
Action: Move a file to the trash
Keystroke: ⌘-Delete

10. INSTANT TRASH COLLECTION

App: Finder
Action: Empty the trash
Keystroke: Shift-⌘-Delete ■

"Everything was always very tidy. Then my family noticed how disorganized I had become."

—Theresa, living with Alzheimer's

When something feels different, it could be Alzheimer's. Now is the time to talk.

Visit

alz.org/ourstories

to learn more

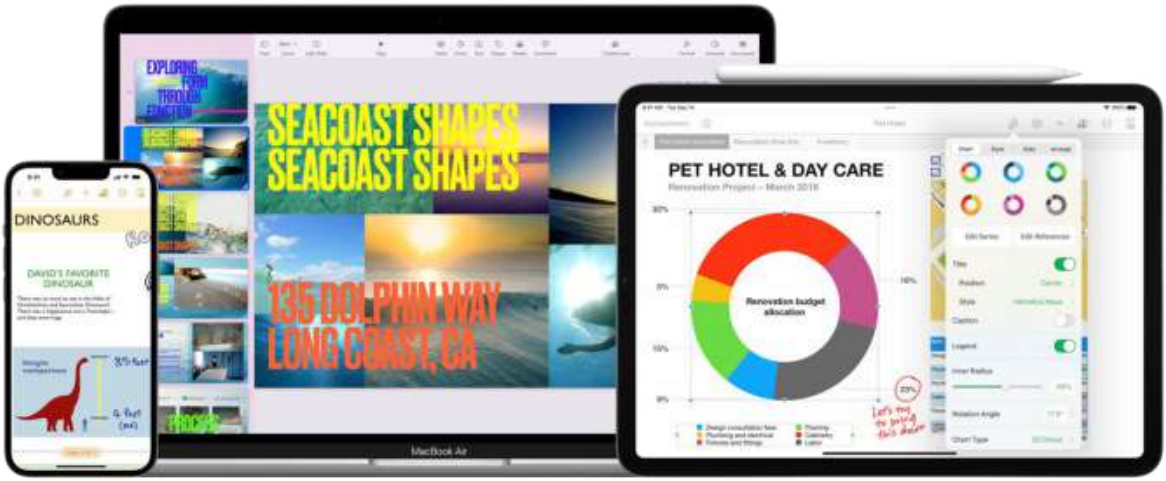
ad COUNCIL

alzheimer's association

iWork update brings major changes to Mac, iPhone, and iPad apps

Live video, pivot tables, view options and more.

BY ROMAN LOYOLA



Apple has updated Keynote, Numbers, and Pages (fave.co/2ZSM3fT), the three apps of its iWork software suite for iPhone, iPad, and Mac. The version 11.2 features make iWork accessible to more users and allow people to create more engaging content.

The new features included in all three apps are as follows:

> Instant translation, available in 11 languages (this feature requires iOS 15, iPadOS 15, and macOS Monterey)

> The ability for participants to add others to a shared document (iOS 15 and iPadOS 15 required)

> Audio graph to make charts accessible to those with vision impairments (iOS 15 and iPadOS 15 required)

> Radar charts for comparing multiple variables

> The ability to create new documents from the Keynote, Pages, or Numbers macOS Dock icon

IMAGE: APPLE

Below are the details for the new features in each specific app.

KEYNOTE: LIVE VIDEO AND MULTI-PRESENTER SUPPORT

Apple's presentation app, Keynote, adds a couple of new options to make presentations more engaging. Keynote now allows presenters to use the front-facing camera on iPhone, iPads, and Macs to implement live video. The video feed appears alongside the Keynote slides, and it can be resized and "styled with masks, frames, drop shadows, and reflections."

Users who are able to put more production effort into their presentations can take advantage of Keynote's ability to connect to multiple external cameras to further enhance the live video experience, and you can also connect an iPhone or iPad right to a slide and use the device for a live demo.

The new multi-presenter support can be used with presenters who are in the same room or joined remotely on an iPhone, iPad, or Mac. And Apple says presenters can "seamlessly" switch between each other.

Other new features include new slideshow controls, as well as iPhone drag and drop support between apps (iOS 15 required).

The Keynote update is 498.5MB on iOS or iPadOS (fave.co/3Ah8qYN) and 305MB on macOS (fave.co/3moOVJc). It can be downloaded through the App Store.

Keynote now lets you add a live video feed that appears along with your slides.

PAGES: BETTER OPTIMIZED FOR iPHONE

According to Apple's press release, "People read Pages documents on iPhone more than any other device." So the update to the Pages writing app has the iPhone in mind. The new Screen View option displays documents in a single

9:41
OUR PROCESS
At Workshop Woodcrafts, we believe that sturdiness and elegance are key factors in sustainability. The more robust an item is, and the more likely we are to celebrate its place in our homes and in our lives, the longer it will last. This insight fuels all of our work.
TYPES OF WOOD
We focus on simple materials, and we make simple things. These are our favorite partners from nature's bounty, and what we use them toward:

The new Screen View option displays documents in a single iPhone-optimized column.

iPhone-optimized column. Users still have access to all of Pages' tools in Screen View, which can be switched off anytime.

Other new features include improved book-publishing features, and a new Quick Format bar on the iPhone version for modifying documents.

The Pages update is 493.8MB on iOS or iPadOS (fave.co/3up2Vol) and 287.3MB on macOS (fave.co/3a5TiDh). It can be downloaded through the App Store.

NUMBERS: PIVOT TABLES

A key reason Microsoft Excel users wouldn't touch Apple's Numbers was the lack of support for pivot tables. That has finally changed with version 11.2—not only are there tools for making pivot tables, but you can also even import pivot tables made with Excel. And pivot tables are available in the iPhone, iPad, and Mac versions.

Other new features include redesigned Quick Filters to show or hide rows that match a specific value, and new filter options to find duplicate data entries and unique values.

Pivot tables finally come to Numbers.

The Numbers update is 527.6MB on iOS or iPadOS (fave.co/2OlaKw3) and 255.9MB on macOS (fave.co/2WI13w1). It can be downloaded through the iOS or Mac App stores. ■

TripMode 3: Modern tool for watching and limiting Mac internet bandwidth use

Simple utility tries to prevent bandwidth-hogging apps from overrunning your network limits.

BY GLENN FLEISHMAN

Macworld EDITORS' CHOICE

It's easy for a Mac to swallow oceans of data given the speed and ubiquity of internet connections. That's a problem when you have an internet connection plan with monthly limits, overage fees, or simple capacity issues. To monitor your usage, TripMode 3 (fave.co/3Damo0H) provides a simple tool that tames your Mac's galloping consumption. TripMode isn't about security, but it can be used in addition to bandwidth control as an effective way to cut off apps from communicating over the internet on specific networks or at certain times.

The idea in this version is the same as with the previous two releases: TripMode

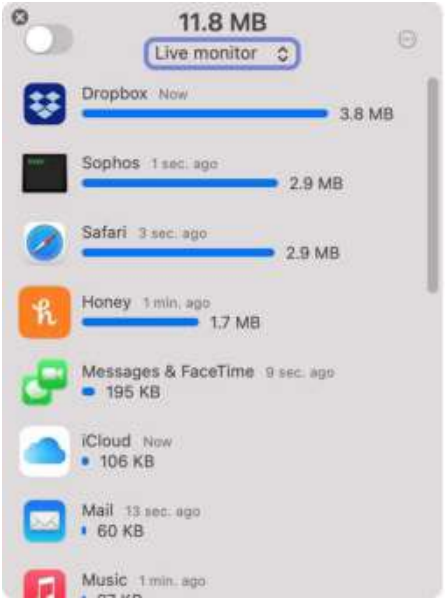
IMAGE: TRIPMODE

tracks data usage by app and lets you create lists of blocked and allowed apps, as well as set an overall limit on bytes transferred to and from the internet. Very few Mac apps make any effort to understand or throttle how much data they use, and TripMode fills that gap.

You benefit from TripMode if you're routinely in situations in which you are using too much data without realizing it, or you're trying to limit data consumption for cost or other reasons, or you want to prevent your Mac or Macs from transferring data at particular times or on particular networks. That's a common issue when you're using a personal hotspot, a cellular- or satellite-backed broadband service, or you consume a lot of data with a cable or telephone company ISP that caps usage or charges overage fees. TripMode can also prevent surprise overnight uses that some users report when their Macs sometimes slip off Wi-Fi networks and connect via the Personal Hotspot feature on their own or a family member's iPhone or iPad.

TripMode can be useful as well when you're on a slow network and you don't want all sorts of background syncing—by Dropbox, iCloud Photos, Google Drive, Evernote, and the like—to move massive amounts of data while you're trying to get other networked activities accomplished. You can disable greedy apps during those periods.

This update works with Big Sur only,



"TripMode" Would Like to Filter Network Content
All network activity on this Mac may be filtered or monitored.
Allow
Don't Allow

Left: TripMode 3 provides live monitoring of per-app internet data usage, and can block individual apps and cap an overall session. Right: macOS Big Sur requires you to grant permission to allow TripMode to filter traffic—in this case, to measure it.

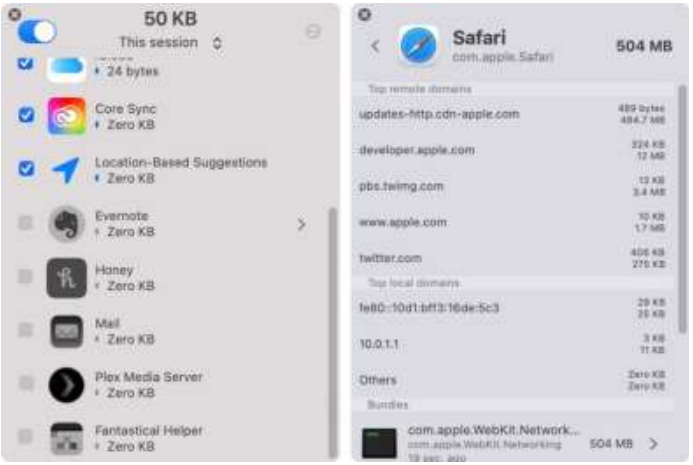
relying on the network-filter approach that gives TripMode fairly unimpeded access to your data stream without bypassing any macOS security features, and allows the company to offer the app both directly and via the Mac App Store. (TripMode 2 remains available for older versions of macOS.) Using networking filtering requires jumping through a few hoops during installation, as macOS requires that you unlock the Security & Privacy preference pane and agree to allow TripMode to monitor your network—that's a good thing.

CONTROL YOUR APPS' DATA CRAVINGS

You may not be fully aware of how everything on your machine craves data and communicates in small sips and deep drafts all the time. TripMode might surprise you by revealing this behavior in full. A simple monitoring mode without any filtering is available by selecting TripMode's icon in the menu bar and selecting Live Monitor from a popup menu at the window's top. That may be the place to start, as it shows you how your apps access the network when they're not constrained.

When you're ready to deploy it, you can choose among a number of strategies, ranging from simple to sophisticated. In the most straightforward mode, you click the switch in the upper-left corner of TripMode's drop-down window to enable filtering with no total usage cap. (You can drag that window to tear it off and leave it persistently onscreen, a feature that's new in version 3.)

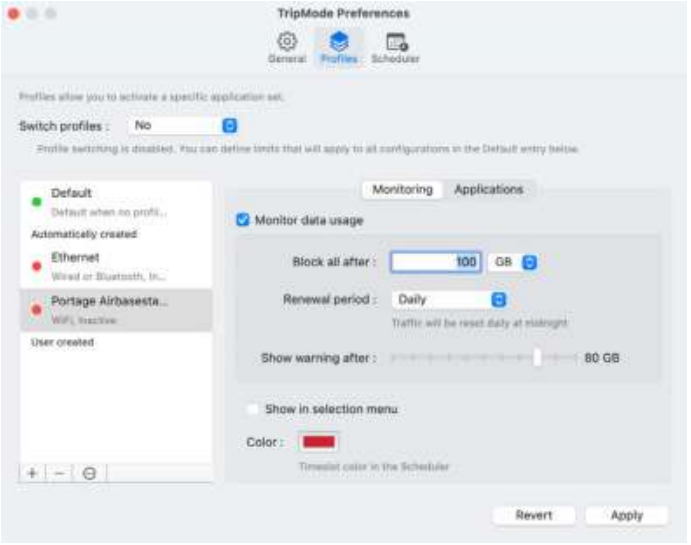
As apps and services attempt to access the internet, the window fills with a list of grayed-out items that have unchecked boxes to their left. You can



Left: Apps that aren't allowed to transfer data while TripMode is active appear grayed out in the activity window. Right: Drill down on any app or service to find out more specifics about how the app is consuming data.

check the boxes next to apps you want to have access. Data transferred over the local network is identified and ignored.

Every time an unapproved app tries to access the internet, the TripMode icon flashes red in the menu bar, although you can disable that or add one of several kinds of notifications, including speaking the app's name. As approved apps send and receive data, a total grows beneath their name and a bar representing data consumed grows longer relative to other apps' usage. A total of all data used appears at the top; click the label beneath the total, and you can select time periods.



Use a profile to set usage limits and permitted apps by Wi-Fi network or network interface, such as Ethernet or USB tethering.

To create an alternative to seeing which apps are blocked and allowing them, click the Settings icon (three dots in a circle), and, in the General view, select Always Allow from "Internet address behavior for newly detected apps," another feature new in version 3. You can use this to accrue a list of permitted apps without blocking them, and then later customize the list in the Profiles view, an excellent addition for people who mostly want to let traffic pass.

For each app or service shown in the window, you can hover over and click a right-pointing arrow at the far right of its listing to see more technical details: a breakdown of the top domains with which the app communicates, as well as any components and system processes that make separate data connections, which you can drill down into. This information might be overkill for most people, but it's useful for troubleshooting heavy or unwanted usage.

Profiles is where the real power lies in using TripMode, as it provides far more specific control. TripMode creates profiles automatically, adding one for

each Wi-Fi network you join and for ethernet, USB tethering, and other network options. If TripMode creates a profile automatically for what it describes as “a potentially expensive cellular network,” it approves well-known browsers and email apps by default, and you can opt to disable those.

You can also create profiles manually, which is useful when you’re setting up configurations that aren’t tied to a network name, such as one for all coffee shop usage (when we return to tapping away in cafés again) or when using a personal hotspot for cell-based connectivity.

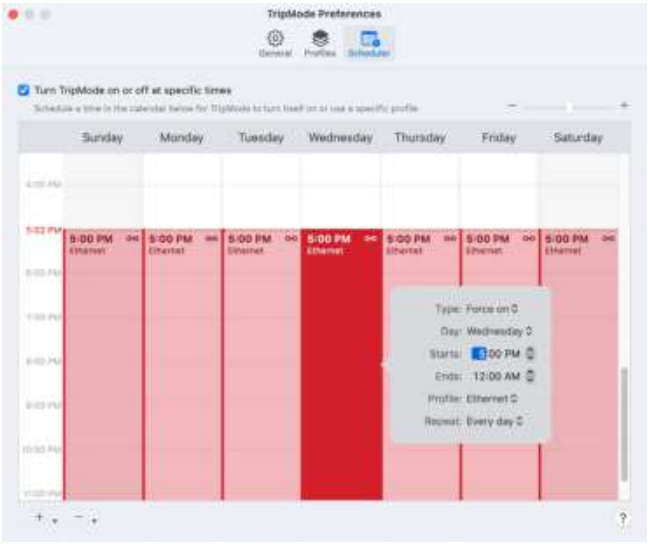
For each profile, you can set an overall data limit, and browse a list of apps to allow or block access from within the profile. This list of apps is a welcome upgrade from the previous version, where you couldn’t view a list of all approved and unapproved apps by profile, and you had to use the monitoring list to manage apps while the profile was selected.

If you cross a limit you’ve set for usage, TripMode blocks all access but lets you click to proceed.

TripMode can control how profiles are swapped or let you choose among them. In the Profiles view in Settings, you can set Switch Profiles to No, which uses a single default profile for everyone; Automatically, which switches based on network interface or name; or Manually, which adds a popup menu to the monitoring and control menu for selection.

In each profile, you can choose a maximum amount of data that can be used before the app blocks all internet access, and a point before that when you’re warned that the limit is approaching. You can set that maximum limit to reset manually, by clicking Reset Now, or on a daily, weekly, or monthly schedule. The app also lets you pick a usage point before all data is used up at which you’re warned, so you have some advance notice. And even after you’ve exceeded your cap, you can click an Unlock button in the monitoring window to continue using the internet.

Profiles can be combined with scheduling, also found in Settings in the Scheduler view, which lets you activate profiles at particular times of day, including repeating the event daily. Scheduling can help you limit or block usage by particular apps or all apps during periods in which



A scheduling feature lets you apply profiles automatically.

you don't want your Mac to engage in unfettered internet access.

TRIPPED UP ON PER-APP CONTROLS

TripMode has a lot of pluses, but there are several actions it doesn't currently offer, some of them constrained by Apple's system design decisions.

The app is oriented toward allowing or blocking specific apps or controlling overall data usage, but it can't cap data usage by individual apps. The company said it's looking into that, but it wasn't a feature many users have requested.

Throttling an app or the overall connection might be a better approach, in which an app can't use more than a set amount of throughput. But TripMode doesn't have the ability to set per-app throughput limits (which TripMode said is somewhat infeasible in Big Sur) or for the Mac as a whole. So if your Mac has access to a 100Mbps internet connection, it will always use as much of that as it needs based on apps' demands, moderated by the usage of other devices on the same network.

The main TripMode window is rather small, and you can't resize it. Sorting options available from the Settings menu are limited to name (A to Z), last activity (most recent first), data usage (highest first), and "State then usage," which sorts apps first that are permitted to access the internet. More options would help, including a resizable window, a search field, and the ability to reverse the order of each of those sorting choices.

While TripMode gathers a lot of data about app, profile, and overall use, there's no reporting or statistics feature, making it difficult to get a snapshot of patterns or overall usage by apps, time of day, and other intersections. It's not a critical feature, but a little deeper dive into data

already collected could be helpful in understanding data usage and troubleshooting spikes of high consumption or other problems.

COMPATIBILITY AND PRICING

This version makes use of new frameworks to allow full Big Sur compatibility and availability via the Mac App Store without jeopardizing security. You grant permission to the app to monitor your network streams. However, version 3 is not compatible with Catalina or previous releases.

Pricing is more baroque than the app's remarkable simplicity, and requires a 5-by-11-cell grid on the company's site to explain it. In brief:

> Purchase it from the Mac App Store for $11.99 per year, and you can use it on unlimited Macs, which includes any Mac connected to the same iCloud account, and any Family Sharing member's Macs. This subscription also includes unlimited future updates.

> Pay $15 as a one-time fee, and you're limited to a single Mac and only minor updates. This seems like a far worse deal.

> For a $45 one-time purchase, you can use TripMode 3 on up to five Macs, TripMode 2 for older Macs on a single machine, and a no-longer-in-development version of TripMode, designed for Windows, on a single computer.

For more information, study the chart in intense detail. TripMode offers a seven-day free trial of its directly downloadable version and of its subscription-based App Store flavor.

You can also purchase a subscription to Setapp, a multi-developer bundle (fave.co/3002IOM), and pay $9.99 per month after an initial seven-day free trial, for access to TripMode and over 200 other apps.

For older Macs running macOS 10.10 to 10.15, you can still purchase TripMode 2 (fave.co/3Fj6L9a), which we gave a 5-star rating to as well (fave.co/3mwHSOK), directly from TripMode for $9.99.

4½

TripMode 3

PROS

- Effective way to prevent uncapped data use.
- Automatic and manual profile creation of bandwidth limits and permitted apps.
- Excellent documentation.

CONS

- No bandwidth throttle, only a cutoff based on overall data usage.
- Doesn't throttle or cap individual apps.

PRICE

$15

COMPANY

TripMode

BOTTOM LINE

TripMode has for years defined its problem focus carefully, and version 3 continues down the same track—even if we haven't taken a lot of trips in the last year. With macOS unable to control its appetite, and many of us finding ourselves in circumstances in which consumption should be monitored and restricted, this app neatly fits the bill. ■

Malwarebytes Privacy VPN for Mac: Good performance from a trusted company

Malwarebytes Privacy VPN does a good job with respectable speeds, comes at a fair price from a well-known company, and is an easy-to-use app.

BY IAN PAUL

Which company can you trust? That is the essential question when it comes to VPN services. Some critics would say you can't trust any of them, but that's an easy answer that is almost certainly false. One approach is to trust a larger, well-known company in the security space. That way, if there any issues it's easier to hold the company accountable (since you know where they are).

One such company that fits that bill is Malwarebytes, which offers a standalone VPN service called Malwarebytes Privacy.

This service doesn't offer a lot of complexity, but it relies on a modern VPN protocol, the app is easy to use, and the privacy promises are right.

SOFTWARE, SERVERS, AND SPEED

Malwarebytes Privacy uses the new WireGuard protocol, which is slowly becoming the standard VPN protocol, replacing OpenVPN on numerous services. WireGuard uses the ChaCha20 cipher for data encryption. Its data authentication is Poly1305-AES, and the handshake encryption is Noise Protocol (IK pattern).

On the privacy side, Malwarebytes doesn't use an email and password to log in to the application on your device. Instead, you use a license key; however, you still need an email address and password to create a Malwarebytes account via the website.

Malwarebytes Privacy with an active connection.

The privacy policy (fave.co/3owicEt) is clearly written and spells out what it collects and why in an easy-to-read format. Malwarebytes says it creates a unique identifier for your device when you install and activate the service to validate license use. It also identifies the version of the service you're using. Malwarebytes says it does not collect your browsing history, DNS requests, bandwidth usage, IP address, telemetry data from the app, or application logs. Malwarebytes is based in the U.S., and the CEO is co-founder Marcin Kleczynski.

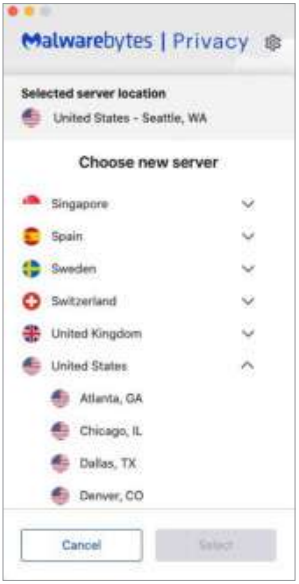
The Malwarebytes Privacy application for Mac has a single panel interface. At the top is a big on/off slider, and below that is your selected location, as well as a Change server location button. There's also a noninteractive world map with a marker showing your selected location. The bottom of the app, meanwhile, shows your real IP address and the IP address of your selected location when the app is active.

There's also a settings cog toward the top with almost nothing to tweak save for an option to trust local devices on your home network such as printers.

Overall, the Malwarebytes Privacy app for Mac is easy to use and understand. There aren't a lot of extra features, but it should satisfy most users looking for a straightforward VPN.

Malwarebytes Privacy offers 32 country locations with more than 245 servers. It's not a huge network, but it offers enough country locations and servers to keep most people happy.

In our tests, Malwarebytes maintained about 26 percent of the base speed, putting it in the middle tier of performers. That result was brought down by a poor showing on the first day of testing. The last two days showed it maintaining more than 30 percent of the base speed, putting it in the upper end of the middle-tier speed range. This VPN should be good enough for most casual uses such as web surfing and video streaming. More bandwidth-intensive uses will likely get good performance by sticking to Western country connections. As always, your experience may vary depending on location, ISP, and networking equipment.



The country list panel on Malwarebytes Privacy for Mac.

PRICING

Malwarebytes Privacy costs $60 for a single year covering five simultaneous connections, and payment is accepted via PayPal or credit card. For those who also want a security suite as well as a VPN, Malwarebytes Premium costs $100 per year for the VPN and device security for five devices.

3½

Malwarebytes Privacy VPN

PROS

- Easy to use and understand.
- Supports WireGuard protocol.
- Clear privacy policy.

CONS

- Not a lot of features.
- Other VPNs have more anonymity features.

PRICE

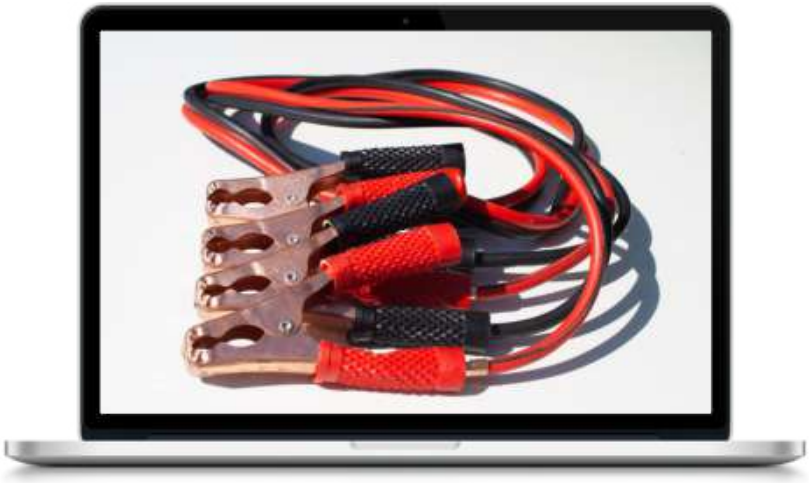
$60

COMPANY

Malwarebytes

BOTTOM LINE

Malwarebytes does a good job, the price is right, and it comes from a respected name in security based in the U.S. This goes a long way for trust and accountability, although anyone looking to maximize their anonymity and pay with a less traceable means won't find it here. ■



How to revive an unresponsive Mac from another Mac

If your recent series Mac won't boot, you can try to "revive" or "restore" it.

BY GLENN FLEISHMAN

Despite our best efforts, sometimes a macOS update goes wrong, such as the power going out in the middle of the process. Other glitches can occur, including ones that are undiagnosable.

If your Intel Mac with a T2 security chip or any M1 Apple silicon Mac won't start up normally or through recoveryOS, you can try to revive it by fixing the firmware inside these chips that handles aspects of security and startup management while preserving all your files. If that fails, you can opt to restore it, which wipes the machine clean, but will get it working again. Both processes are made for system administrators but anyone can use them.

(You launch recoveryOS by starting up or restarting an Intel Mac with Command-R held down, or by shutting down your M1 Mac completely, then holding down the power button for about 10 seconds, until the Options gear appears.)

This revive or restore process works only for Intel Macs with the T2 chip, which includes all Intel models shipped starting in 2018 plus the 2017 iMac Pro, and with

IMAGE: UNSPLASH

the three M1-based Macs released in 2020. Of all those models, only the 2019 Mac Pro provides a visual indication that something's wrong with its firmware or startup process: Its status light turns amber and flashes SOS in Morse code (three short, three long, and three short) if it needs to be revived.

Apple provides some rather complicated instructions for applicable Intel Macs (fave.co/3uJvAWV) and all M1-based Macs (fave.co/3uL4q1K), which are aimed at school and business computer professionals. It's a lot to wade through for "civilian" users, so here's a simplified guide. You only need to consult Apple's more exhaustive how-to if you want to look up the Thunderbolt port locator illustrations described below.

First, you need to obtain Apple Configurator 2 (fave.co/3oBqsD2), a free utility from Apple designed to deploy and manage Apple devices (this requires macOS Catalina or later).

Next, you need to make sure you have the right cables. Apple requires that the Mac you are reviving be plugged into power, including laptops, and that power can't be provided from another Mac over USB-C. However, you also need a USB-C data cable to connect the two Macs, and it has to be plain USB-C designed for USB 3.1 Gen 2 or later, not a Thunderbolt 3 cable. (Here's how to figure out whether your cable with USB-C tips is Thunderbolt 3 or not [fave.co/3ae8EW4].)

Now you are all ready to set up the revival process.

REVIVE YOUR MAC

In none of the below cases will you see anything on screen until after Configurator gets to work. Follow these steps:

1. Install Configurator 2 onto the Mac you're going to use to revive your unresponsive computer.

2. Disconnect your unresponsive Mac from power, whether it's an AC-powered iMac, iMac Pro, or Mac mini, or a laptop plugged into a power adapter. On a laptop, hold down the power button for about five seconds to ensure it's powered down. If it's a Mac mini or iMac Pro, make sure there's a monitor attached so you can see progress later during the revival or restoration process.

3. Connect the Mac that's reviving the other Mac via a particular port on the unresponsive Mac. One Thunderbolt port on every Mac covered by this technology is specially equipped to allow revival or restoration. See the list at the bottom of this article to find yours.

4. Power up the unresponsive Mac in a way that varies by model:

Intel Mac mini, iMac, or iMac Pro: Hold down the power button, plug it into power, and keep holding down for three seconds.

Intel Mac laptop (any model): Hold down the power button and the left Control key, the left Option key, and the right Shift all at once for about three seconds.

M1 Mac mini: Making sure the power has been disconnected for more than 10 seconds, hold down the power button, plug the computer into power, and release the button. Its status light should glow amber now.

M1 MacBook Air or 13-inch MacBook Pro: This is similar to the Intel models, but note the differences. First press the power button, and then immediately hold down the power button along with the left Control key, the left Option key, and the right Shift key for about ten seconds. Release Control, Option, and Shift, but keep holding down the power button until it appears in Configurator on the attached Mac.

Now you can attempt to revive the firmware, which keeps all your files intact:

1. On the Mac running Configurator, in its device window, your other Mac should appear if you have the cables connected correctly. Select the Mac you're connected to, and then choose Actions ➔ Advanced ➔ Revive Device and click Revive.
2. The unresponsive Mac will show an Apple logo intermittently during revival. If successful, it will reboot.
3. macOS may still not be working correctly, even if the revive functions. In that case, however, the Mac is now responsive and has recoveryOS correctly installed. You can restart into recoveryOS as described above, and then reinstall macOS without erasing any of your files.
4. You can disconnect the cables from the other Mac.

RESTORE YOUR MAC

If this process fails, you may be unable to recover any data from that Mac, and it requires a complete restoration, which resets the Mac and erases its contents. It's a last-ditch process, and if you have unique data on that Mac that's not backed up, you should determine whether there's any other way to get that data from it before proceeding. Here's how to restore your Mac's firmware after ensuring you have made every effort to extract needed files:

1. On the Mac running Configurator, in its device window, select the Mac you're connected to, and then choose Actions ➔ Advanced ➔ Restore and click Restore.
2. The unresponsive Mac will show an Apple logo intermittently while restoration proceeds. If successful, it will reboot.
3. **With an Intel Mac:** Now hold down Shift-Option-Command-R to install the version of macOS that your Mac shipped with or the oldest version still available. After reinstallation, you can upgrade to a later macOS.

If you're not sure which port to use, head over to Apple's website for detailed illustrations.

4. With an M1-based Mac: macOS Setup Assistant appears to guide you through installing Big Sur.

You can disconnect the cables from the other Mac.

WHICH PORT TO USE

Apple snuck in a special feature on one Thunderbolt port on every Mac covered by this revival and restoration feature. Here's the rundown, which you can also see in graphical form in the support document for Intel Macs (fave.co/3uJvAWV) and M1 Macs (fave.co/3uL4q1K). In cases where you need to distinguish left and right, you have the ports facing you directly, so that means left and right are *your* left and right.

Intel Mac mini: Rightmost Thunderbolt port.

Intel Mac laptops: When looking at the left side of the laptop, the Thunderbolt port at the right.

Intel 2020 iMac or iMac Pro: The rightmost Thunderbolt port on the back of the unit, whether it's four (iMac Pro) or two (iMac).

Intel 2019 iMac Pro (tower): The Thunderbolt port farther away from the power button on the top of the computer.

Intel 2019 iMac Pro (rack mounted): The Thunderbolt port that's closer to the power button.

M1 Mac mini: The Thunderbolt port on the left, furthest from the HDMI port.

M1 Mac laptops: On the left side of the laptop, the Thunderbolt port on the left (there are no Thunderbolt ports on the other side of these models). ■

How to force a native M1 Mac app to run as an Intel app instead

Force an app to use Apple Rosetta environment with an Apple silicon Mac.

BY ROMAN LOYOLA

When Apple released the first Macs with the M1 processor (fave.co/3iynWtq)—the first generation of Apple silicon—it also introduced a whole new architecture to run apps on the Mac. So to take full advantage of the new chip's speeds, Intel software needs to be rewritten specifically for the M1 processor. Developers need time to write apps with that "native" code, however, so Apple created a translation tool called Rosetta 2 (fave.co/3mss0wy) that allows existing Intel-based software made for Intel Macs to run on Apple silicon.

IMAGE: APPLE

If you have an M1 Mac, you're probably already using Rosetta without realizing it. The first time you launched an app that required it, an alert appeared to tell you Rosetta was needed and asked for your permission to install it. After the installation, Rosetta is automatically available to any app that needs it. The same goes for M1 apps. If a native app is available, your Mac will automatically run that version.

However, there may be a time when you have a Universal app (an app designed to run on both Intel and Apple silicon Macs) and you want to run the Intel rather than the M1 version. This could be due to an M1 app that's missing a feature you need (fave.co/3iAS9YO), or you may be you're using an app with third-party plug-ins or extensions that are only compatible with Intel.

In those instances, it's possible to force a Universal app to run the Rosetta version instead. And you can switch back to running natively when you need to. Here's how.

1. Find the app in the Applications folder.

2. Select the app, and then press Command-I (or right-click to use the File menu and select Get Info.). This will open an Info window with details about the app.

3. In the Info window, look for a checkbox labeled "Open using Rosetta." Check the box.

4. Close the Info window.

5. If you're already running the app, quit and relaunch.

Now, whenever you launch that app, your Mac will run the Intel version of the software and use the translation layer. If you want to stop using Rosetta, just repeat the instructions and uncheck the box. ■

On Apple silicon Macs, you can force a Universal app to run using Rosetta by checking the option in the app's Info box.

FOR SOME, FEELING

LEFT OUT

LASTS MORE THAN A MOMENT.

WE CAN CHANGE THAT.

We've all had moments where we've felt we didn't belong. But for people who moved to this country, that feeling lasts more than a moment. Together, we can build a better community.
Learn how at BelongingBeginsWithUs.org

BELONGING BEGINS WITH US

ad COUNCIL

Apple teams with A-Cold-Wall on Beats Studio3 headphones

The limited edition headphones will go on sale soon for $350.

BY ROMAN LOYOLA

Apple recently revealed a new partnership with fashion company A-Cold-Wall (fave.co/3iC7Oao) in the form of new Beats Studio3 Wireless Limited Edition headphones (fave.co/3msAqnl). Beats by Dr. Dre (fave.co/3a9jMDT), the Apple-owned company behind Beats gear, has partnered with the streetwear company to produce the Studio3 in a special colorway.

The A-Cold-Wall headphones come in a Cement color combo, which consists of

IMAGE: APPLE/BEATS BY DR DRE

The A-Cold-Wall headphones have the same specs as the other Studio3 Wireless headphones.

dark gray with white specks. The inner band is a Clay color. The new color combination joins the Matte Black, Red, White, Blue, Defiant Black-Red, Midnight Black, and Shadow Gray options (fave.co/3acpR2h).

Since these headphones have the "Limited Edition" tag, we can probably assume that the product run for these will not be long. At the time of this writing, the A-Cold-Wall Limited Edition was listed on the Apple Store online but not on the Beats By Dre website or a-cold-wall.com (fave.co/2YvmZv1).

The A-Cold-Wall headphones have the same tech specs as the other Studio3 Wireless headphones, with Pure Active Noise Cancelling, the Apple W1 chip for Bluetooth, 22 hours of battery life (40 hours with Pure ANC off), and on-ear controls. They are priced at the same $350 as the other Beats Studio3 Wireless headphones.

Apple lists the Studio3 Wireless A-Cold-Wall headphones as "Coming Soon." No official ship date has been announced. ■

We don't think these headphones will be available for long.

Apple acquires Primephonic classical music streaming service to improve Apple Music

Apple will release a stand-alone classical music app next year.

BY ROMAN LOYOLA

Apple recently announced it has acquired Primephonic, a streaming media startup with a focus on classical music. In a press release (fave.co/3FnFAK3), Apple said that users will be able to access Primephonic playlists and exclusive audio content, and that a "dedicated experience with the best features of Primephonic" will eventually be available.

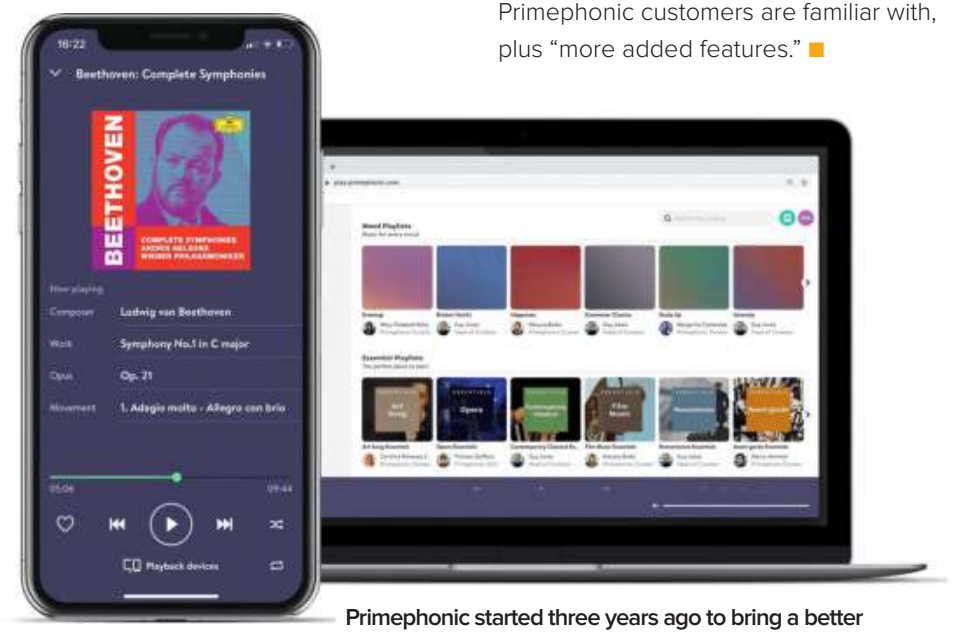
Digital music can be challenging to manage on streaming services—the

IMAGE: LARISA BIRTA/UNSPLASH

metadata system for music files was created with popular music in mind. Apple made some improvements years ago when Apple Music was called iTunes, but it still was frustrating for classical music listeners. With the Primephonic acquisition, Apple says it can provide a better experience, with the ability to search by composer and repertoire, as well as "detailed displays of classical music metadata, plus new features and benefits."

A note on the Primephonic website (fave.co/3AI19ay) seems to indicate that the three-year-old company saw the acquisition as necessary for it to achieve its goals. "As a classical-only startup, we can not [sic] reach the majority of global classical listeners, especially those that listen to many other music genres as well," said the company. "We therefore concluded that in order to achieve our mission, we need to partner with a leading streaming service that encompasses all music genres and also shares our love for classical music."

Primephonic users can continue to use the service for free until it is shut down on September 7, and they can get six months of Apple Music for free. Apple will release a dedicated app for classical music next year that will have features Primephonic customers are familiar with, plus "more added features." ■



Primephonic started three years ago to bring a better streaming experience to classical music fans.

Tronsmart Mega Pro Bluetooth speaker: Big bass, small price tag

The industrial design is a snore, but the performance will keep you from nodding off.

BY CHRISTOPHER NULL

Macworld EDITORS' CHOICE

While the typical portable Bluetooth speaker tops out at 30 watts, Tronsmart's Mega Pro doubles up the power to 60 watts. And you'll definitely notice the impact. Sure, it's not much to look at: It's an all-black, metal-grilled monolith designed in the familiar shoebox form factor and weighing in at nearly four pounds, but Tronsmart seems to suggest your ears should do the heavy lifting.

Although the manufacturer doesn't break out channels or detail the sizes of its drivers, the company does say this unit contains dual tweeters, a single woofer and one passive radiator, and separate amplifiers for each channel. A 10,400mAh battery promises to provide about 10 hours of total playtime, which can be delivered via Bluetooth connection, 3.5mm AUX (cable included), or, curiously, via a microSD card slot.

IMAGE: TRONSMART

Nothing fancy under the hood: dual tweeters, a single woofer, and a passive radiator in back. Dual 60-watt amplifiers pump the volume.

You'll also find a USB-A port on the rear of the unit, which can be used for charging devices *or* for playing stored music from a connected thumb drive. The speaker itself charges via a separate USB-C port, and while a USB-C to USB-A cable is included, an A/C power adapter is not. NFC is supported for Bluetooth pairing to your source of choice.

Controlwise, the system offers few surprises. There's a largely intuitive row of touch-sensitive buttons across the top of the enclosure, including a volume strip that lets you adjust loudness by sliding your fingers along it. You can tap a small microphone icon to answer incoming phone calls once the device is paired via Bluetooth; you can also use it to activate your phone's voice assistant. The speaker also includes three equalizer modes. One is designed to accentuate vocals, another is for "3D sound," and then there's the default mode: "deep bass," which I generally found to be the best option no matter what kind of music I was playing.

Clearly much attention has been given to the bass output here—it's downright thundering. That said, as incredibly loud as

The Tronsmart Mega Pro has touch-sensitive controls, including a volume slider, on the top of its enclosure.

True Wireless Stereo (TWS) support means you can both double up and create a stereo pair using two Mega Pro speakers.

this speaker can be, it's also generally crisp and clear. With a specified frequency range of 20Hz to 20kHz (no tolerance given), it handles everything from violin to electric guitar with ease, and lyrics were invariably clean and easy to hear in my testing.

At higher volumes, some distortion does make its way into the mix on the low end, but I often found myself turning the volume down not because of fuzziness but because it was just so incredibly loud. This is a clear contender for outdoor parties, and it doesn't hurt that the unit is rated as IPX5 waterproof, which means the speaker is protected from water jets coming from any direction (you can read all about IP codes in this story [fave.co/3BmKhkC]).

Need more power? True Wireless Stereo (TWS) support means you can both double up and create a stereo pair using two Mega Pro speakers (although I was only sent a single unit to test). But frankly, for most environments, a single speaker will probably be plenty. At a street price around $90 ($120 MSRP), it's hardly a budget-breaker either way. ■

4½

Tronsmart Mega Pro Bluetooth speaker

PROS

- Can get incredibly loud.
- Lots of connectivity options, including TWS support.

CONS

- Dull aesthetics.
- Some distortion at very high volume.

PRICE

$90 ($120 MSRP)

COMPANY

Tronsmart

Tribit QuietPlus 50: Active noise cancellation on the cheap

The overall sound of these super-affordable headphones is good and the ANC is effective, though it noticeably reduces high-frequency reproduction.

BY JON L. JACOBI

Tribit's $60 QuietPlus 50 headphones sound good in normal mode, and they do a good job of cancelling noise when active noise cancellation (ANC) is enabled. Unlike with pricier ANC headphones, however, noise cancellation robs a bit of the top-end frequency response in the process. Given that those pricier products cost many times as much, some listeners might consider the small drop-off livable.

DESIGN AND FEATURES

The QuietPlus 50 headphones come in a basic flat black on flat black. I personally find them attractive, but I'm unconcerned with fashion. If that means something to you, study the image carefully.

The ear cups are comfortable, but as with other Tribit headsets I've tried, I find the default fit a bit snug. That does help with the passive noise reduction, but the cups don't swivel, so the fit isn't perfect when

IMAGE: TRIBIT

you extend them. That said, I've certainly run across less comfortable headsets.

The big feature of the QuietPlus 50 is, of course, the active noise cancellation, which is effective—with the aforementioned cost in treble reproduction. There's a mic in each cup for the ANC. The left cup hosts a USB-C charging port; a 3.5mm audio jack; a rocker switch for volume control and next track/previous; a multi-function button for power on/off, answer/hang-up, and summoning Siri; and buttons for enabling and disabling ANC. Tribit includes both a 9-inch USB charging cable and a 3-foot 3.5mm stereo analog audio cable in the box.

Tribit's QuietPlus 50 headphones do a good job of noise reduction, albeit with a reduction in high-frequency reproduction. Without ANC enabled, they sound quite good for the price.

SOUND AND BATTERY

The QuietPlus 50 headphones sound good with ANC disabled. I had no problems listening for a couple hours straight during testing. But there's that loss of the high end with the ANC engaged. It's not enough to ruin the deal, and you might not even notice it with all the white noise in a plane, but the change is noticeable.

If you want barely discernible fidelity loss, you need something more along the lines of Sony's WH-XB900N (fave.co/3oLfLOa) or the Phiaton 900 Legacy (fave.co/2YzhF9Y) that I just reviewed.

The QuietPlus 50's 40mm drivers generate quite a bit of bass—not Sony Extra-bass amounts, but more than enough for the average listener. The high end is decent (sans ANC), though not quite as sparkly as I like it.

Midrange is likewise adequately defined, but not quite as punchy as what you'd hear with better cans. Then again, punchy can get to be tiring. Tribit claims you can get 30 hours of play time from the QuietPlus 50. I was still going at about 10 hours.

The QuietPlus 50 headphones offer a lot for the money.

HOW I TEST HEADPHONES

I evaluate all wireless headsets via Bluetooth and with a cable if such a connection is available. Listening material includes AC/DC's "Thunderstruck," Jerry Goldsmith's title theme from *Star Trek First Contact*; Toto's "Africa," Green Day's "Minority." Young Jeezy's "Put On," Vladamir Ashkenazy playing Chopin's Etude No. 5 in G-flat; and "Mars" from Gustav Holst's *The Planets*, performed by Pierre Boult and the London Symphony Orchestra.

In addition to music, I play pink noise, white noise, brown noise, low/high frequency bursts, various pulses, and frequency-sweep files to check response and to back up opinions formed during music-listening sessions. I use Windows Media Player and iTunes as media players, and an Honor V smartphone.

To evaluate latency, I connect a Soundcast VGtx Bluetooth transmitter (fave.co/3AhN1yL) to a 43-inch TCL 5-series smart TV (fave.co/3Bi3WCT) and watch instrumental performances, where finger movements will reveal any issues with soundtracks falling out sync.

BOTTOM LINE

Given that the QuietPlus 50 headphones are only $60—and were going for $10 less at the time of this review—I consider them a good deal. They're not top-tier in sound or comfort, but for the occasional plane trip, you shouldn't have any complaints. And as I said, I had no issues spending a couple hours with them sans ANC. That said, I think Wyze Labs' Wyze Noise Cancelling Headphones (fave.co/3yA7X3p) are an even better deal. ■

3½

Tribit QuietPlus 50

PROS

- Super-affordable ANC headphones.
- Attractive industrial design.
- Good sound with ANC disabled.

CONS

- ANC feature also cancels some high-end frequencies.
- Ear cups don't swivel for comfort.

PRICE

$60

COMPANY

Tribit

Andover Audio Songbird: This budget-priced music streamer is no featherweight

This low-priced audio component compares favorably to the likes of Sonos and Bluesound—at a fraction of the price.

BY JONATHAN TAKIFF

Don't let its small size and $129 price tag fool you: Andover Audio's Songbird music streamer flies high and sings almost as sweetly as competitors that cost three or four times more. The Songbird also offers near best-in-class ease of use and connectivity.

Nurtured by Boston audio community vets, Songbird is targeted primarily to the gazillions of people who bought nice sound rigs in the pre-internet age: Built-

IMAGE: ANDOVER AUDIO

The diminutive Songbird is just the ticket for older audio components that predate digital audio inputs, such as this vintage Sansui receiver.

tough, classically styled stereo gear still functioning quite well, thank you, though maybe gathering dust because the vinyl, tape, and CD content it was designed for seems like stuff from the dark ages of shopping at Tower Records and Sam Goody.

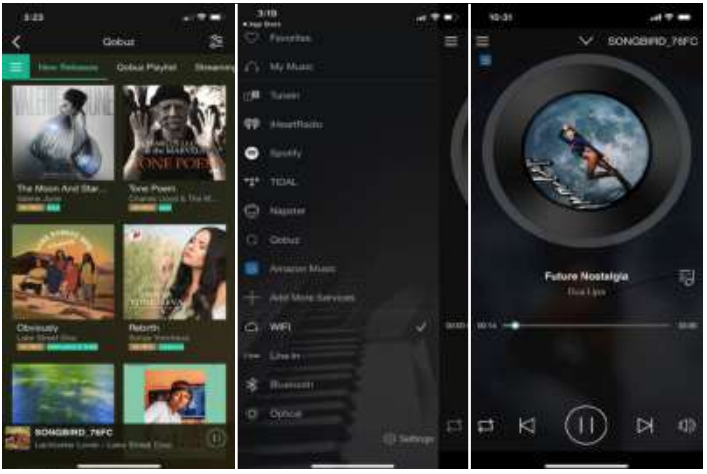
Rejoice! Songbird can get you and that rig humming again, with instant access to hundreds of thousands of fresh, free, streaming radio stations and podcasts, plus tens of millions of on-demand music selections—old and new—that can be summoned in an instant for about the cost of one album a month.

Barely larger than a tin of breath mints at 3.25x3x1 inches (WxDxH) and nesting in a nondescript plastic case, Songbird is intentionally made small and light and supplied with short-run cables so it can easily be stashed behind your receiver. That low-budget exterior allowed a healthier percentage of manufacturing moolah to be spent on the guts inside, where it counts.

Andover's director of engineering and product development, Bob Hazelwood,

On the Songbird's front panel (left to right): a USB power-supply port, an LED that's very bright when the unit is powered on, and a dual-function push button for selecting inputs or performing network configuration via Wi-Fi Protected Setup.

told me he was inspired by a low-cost NAD receiver from the 1970s "that wasn't much to look at but had great sound." He also took cues from a legendary audio guy he met while working at Cambridge Soundworks—co-founder Henry Kloss—who championed the cause of affordable, everyman hi-fi rather than sky-high–priced esoteric stuff.



The Songbird app—shown here in three views—is easy to use and attractive to look at.

The Songbird really delivers once connected to your home network via ethernet or Wi-Fi (2.4GHz only). The iOS/Android streaming app—licensed from Linkplay Technology—is stable, responsive, intuitive to operate, and nice to look at. I love the rotating album covers that spin as the music plays. The streaming platform, also from Linkplay, currently supports the high-res music services Qobuz and Tidal (although not the latter's MQA-encoded Masters tier), as well as the more plebeian services Spotify, Napster, TuneIn Radio, iHeart Radio, and Amazon Music.

While the app doesn't provide any visual confirmation that I'm getting the bumped-up Amazon HD content I'm paying extra for, the software team promises that I'm receiving CD-quality streams from that source, and that support for Amazon's ultrahigh-res content is coming soon.

Linkplay also is contemplating Andover's request to add onboard app access for Pandora, SiriusXM, and Apple Music. To land those services on Songbird today, you'll need to throw them to the player via Bluetooth (2.1 + EDR) or Airplay (version 1) from your mobile device or computer. Chromecast is not supported.

Andover's expertise comes to the fore in the selection of components—and the tweaking thereof—that process those incoming streams. This includes a Cirrus

The Songbird doesn't have a headphone amp, but it should sound great with any self-powered set of cans that accommodates a cable, such as the Bose QC-35 II shown here.

Logic DAC that can convert up to 24-bit/192kHz digital audio to a full-throated analog rendering through the Songbird's RCA stereo outputs. With the aid of a clean power supply and a good output buffer, I had no problem at all detecting the difference between 320Kbps Napster streams and the dramatically richer, livelier, CD-quality or better renderings of the same material from Qobuz and Tidal.

This included well-recorded new releases by Lake Street Dive (*Obviously*) and Willie Nelson (*That's Life*), which I didn't mind hearing multiple times over. That pick-me-up differential even proved potent when I compared the streams playing on a 15-year-old Bose Acoustic Wave Music System II and a pre–digital-age Sansui RZ-9500AV receiver (connected to ADS and Niles Audio in-wall speakers). And for good measure, I also auditioned this sweet little box with a recent-vintage high-end Yamaha RX-A3060 A/V receiver playing through big-bubba Bowers & Wilkins Nautilus 803 floor-standing speakers.

This little bird also tweets sweetly when plugged into self-powered headphones, such as the recently reviewed Bose QC 35 II (fave.co/3mtgrVJ). The combo makes for a great little personal audio system that's usable wherever Wi-Fi and AC power are available.

HOW DOES SONGBIRD COMPARE TO SONOS?

I performed A/B comparisons of this and several competing streamers with the Yamaha/B&W rig, switching first between the Songbird and the likewise connected Sonos Port (fave.co/3Bh8XeU; $449), and then the higher-striving Russound MBX-PRE (fave.co/3BvJXzY; $399) and Bluesound Node 2i (fave.co/3DiEJc0; $549). All were whistling the same happy tunes through

their internal DACs and analog outputs. I listened to Keith Jarrett's revealing *My Song* set (my reference standby); Dua Lipa's pop smash *Future Nostalgia*; Kings of Leon's newbie *When You See Yourself*; and a sterling set of high-res *Beethoven and Brahms: Violin Concertos*, spotlighting Gil Shaham and Brooklyn-based ensemble The Knights.

The Songbird held up quite well against these much more expensive competitors. It has a slightly harder-edged tone than the Sonos Port, though I'd say it's within a hair's breadth of matching it in terms of overall dynamics, sensitivity, and clarity. The Russound and Bluesound units delivered a shade more vocal warmth and presence, a fuller rounding out of instrumental sounds, and better overall depth of field (an airy spaciousness) to my hypercritical ears.

The Andover Audio Songbird is equipped with analog and digital inputs, as well as outputs, rendering it useful with both modern and older audio gear.

But the differences weren't apples and oranges—more like clementines versus tangerines. If you're not doing a direct and obsessive comparison, I'd wager you'd never notice the Songbird's sonically inconsequential shortcomings and would be fully satisfied with it. I certainly am, at least when this lovely's the only one I'm with.

WHY DOES THE SONGBIRD DOWNSAMPLE?

I was less impressed with the Songbird's downsampling of higher-res digital signals to 16-bit/44.1kHz for output to its Toslink optical digital audio output. The product's designers put that in place so the data stream would be fully compatible with both older receivers limited to accepting 16-bit streams and newer receivers that max out at 24/96 streams. Resampling is also performed to facilitate networked multi-room deployments.

Songbird provides the user with variable level control over the digital output signal, which is a blessing if you don't have a remote for your receiver; you can control the volume from the Songbird app. Altering the output of a digital signal, however, is fraught with

danger because it involves step-down processing with the potential to make music sound flattened and compressed.

The Songbird endowed this 15-year-old music box with renewed relevance.

I ran into the same problem when reviewing the Sonos Port, which does a more brutal job than the Songbird at scaling down the volume-related bits. But at least the Port gives users the option to switch to a fixed-level digital output that's free from those problems; this first-generation Songbird does not offer such an accommodation. The Russound and Bluesound streamers, meanwhile, avoid the problem altogether by only offering fixed-level optical digital audio outs.

The *good* news is that the Songbird's onboard DAC puts out such terrific analog sound that there's really no reason to connect the streamer's digital output to an outboard DAC. And no damage is done to the analog signal when you raise and lower *its* volume. By the way, when I voiced my concerns about all this to Andover's Hazelwood, he said the Songbird's optical digital audio output performs best when left at 100 percent volume, so that all volume adjustments are performed on your receiver or amp.

Less problematic to my ears is the fact that the Songbird offers the user menu options to step up or step down the maximum resolution of incoming digital signals from 24 bits (with sampling rates of either 96kHz or 192kHz) to 16/44.1 or even down to MP3 at 320Kbps. That's helpful for reducing bandwidth-induced signal dropouts when more than one Songbird is flying on your home Wi-Fi network. Andover suggests up to five Songbirds can coexist with synchronized or standalone streaming on the average

Wi-Fi system. Interestingly, this data-download level adjustment is done in the cloud: The Songbird just sends out a message that it's ready to sync at a specified rate.

IS THE SONGBIRD A PLUG-AND-PLAY STREAMER?

I can't emphasize enough how easy the Songbird is to set up and use. Voice prompts help you connect to the internet and audibly acknowledge when you've changed source. In addition to offering streaming sources, the box has both 3.5mm analog and Toslink digital inputs for plugging in other audio sources. With just the tap of the line-in icon on the Songbird app, I was able to switch from a streaming station to an Ivan Lins tribute disc spinning on a Sony CD Walkman, with the tune emerging from a UE Boom powered portable speaker plugged into the Songbird's aux out.

If I had two or more Songbirds on my network with speakers connected, I'd be able to enjoy the same balmy Brazilian tunes playing in multiple rooms. Alternatively, I'd be able to direct the left and right channels of the recording to separate Songbirds and speakers for a wide stereo effect. There's also an ethernet port for a wired network connection, with gapless playback if you use Airplay or DLNA. But sorry, there was no room or budget for a USB port on this product. Guess we'll have to wait for a second-generation Songbird for that.

I was also impressed with how quickly the Songbird boots up, which is a great feature when you decide to decamp and move your listening session to another room. The Songbird app on my iPhone 12 Pro and iPad were equally speedy and resilient in adjusting to such changes, which is more than I can say of some of the Songbird's higher-priced and more finicky rivals.

Andover Audio Songbird

PROS

- Refined, high-resolution audio performance.
- Polished user interface and surefooted operation.
- Supports most of the biggest music-streaming services.

CONS

- A fixed-level digital audio output option would be a nice addition.
- Gapless playback depends on external buffering.

PRICE

$129

COMPANY

Andover Audio

BOTTOM LINE

There's plenty to like about Andover Audio's Songbird, a network music streamer offering oodles of connectivity and sourcing options for a very affordable price. While some will balk at the notion of the Songbird downsampling a high-res music stream to 16/44.1 before routing it to its optical outputs or sending it over a network, less particular listeners will just enjoy the music—and the savings. ■

MAKE THE FOREST
PART OF YOUR STORY
Remember the last time your family visited the forest? It's a place of wonder and imagination for the whole family—where stories come to life. And it's closer than you think. Sounds like it's time to plan your next visit. Make the forest part of your story today at a local park near you or find one at DiscoverTheForest.org.
DISCOVERtheFOREST.org
ad COUNCIL
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USDA
DEPARTMENT OF AGRICULTURE

Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN

HOW TO LET IMPORTANT PEOPLE GET THROUGH iOS 15's DO NOT DISTURB OR FOCUS SETTINGS

The Do Not Disturb options added to iOS, iPadOS, and eventually macOS should be entered in history books for their contributions to people's uninterrupted periods of sleep and focused times while working. However, what if you want to provide an exception for people important in your life, particularly for emergencies?

In the past, iOS has offered a bypass for several releases in a couple of different places; iOS 15 improves upon this (fave.co/3AhC8Nl).

With Do Not Disturb, you could allow anyone in your Favorites list in the Phone

IMAGE: KOSTOV/SHUTTERSTOCK

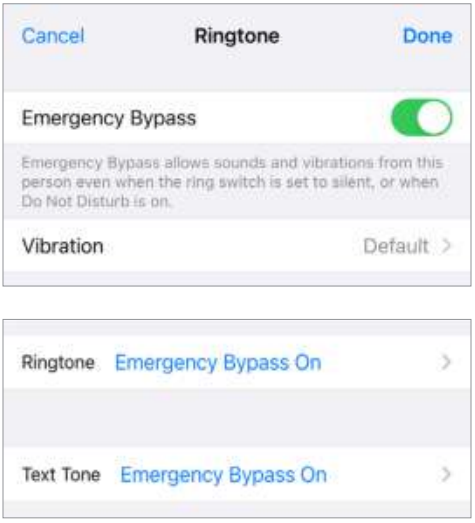
app to bypass the DND setting for calls. A separate option for calls and the only way to pass through text notifications required a not-so-obvious process: Open a contact, tap Edit, tap Ringtone (for calls) or Text Tone (for texts), and then tap Emergency Bypass. You can make this change in either or both Ringtone and Text Tone. Tap Done when complete.

This Emergency Bypass feature is still available in iOS 15, but the update gives you a lot more options in customizing your Focus modes, including Do Not Disturb, now a subcategory of Focus.

Go to Settings ➔ Focus and tap any of the categories, like Do Not Disturb, Driving, or Sleep. Under Allowed Notifications, you can choose settings separately for People and Apps.

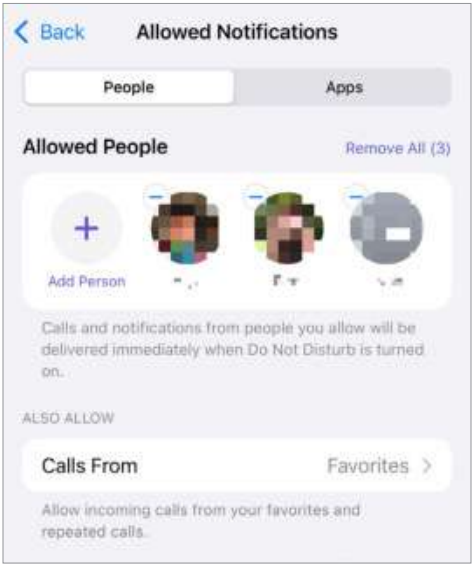
Tap People and you can find the old option for passing through calls, now under Also Allow as Calls From. Tap that menu to switch between Favorites and options such as Everyone (a little self-defeating?), No One, only people in your contacts, or Groups. You can also opt to allow repeated calls—otherwise, calls will only be passed through when they occur more than three minutes apart for your selected people.

But Allowed Notifications also lets you add individual people by tapping the Add Person + button. This setting affects both calls and notifications. This is parallel to



Emergency Bypass, hidden in the Contacts editing screen, grants permission to contacts to bypass your Focus and Do Not Disturb settings.

Add individuals through the Allowed Notifications section's People list in any Focus mode.



The Allowed People section lets you pick individuals for whom you want to override Focus for both their text notifications and their incoming calls.

but managed entirely separately from the Emergency Bypass option above.

What are the differences between Emergency Bypass and Allowed Notifications ➔ Allowed People?

Calls: Emergency Bypass can be set just for calls; Allowed People can't be limited to just calls.

Texts: Likewise Emergency Bypass can be set just for texts; Allowed People cannot.

For all calls and texts: Emergency Bypass overrides any Focus mode in iOS 15, similar to overriding Do Not Disturb in iOS 14 and earlier.

Per Focus mode: Allowed People can be set distinctly for each Focus mode.

The whole point of these various bypasses is to make sure you don't miss something that's vital. Choose wisely and use the range of options to your advantage to tweak incoming calls and text notifications to fit.

HOW TO SPLIT UP AN APPLE ID AMONG FAMILY MEMBERS AND FORWARD THEIR EMAIL

I have noted many times that the Apple ID is the center of one's Apple life. It's your ID across all stores and services, and a tool to recover access to your Mac, iPhone, and iPad (or erase them remotely if lost or stolen), depending on how you've configured things.

But many, many people started down a path years ago where a single adult in the family set up an Apple ID, and then shared it with a partner or spouse, and then extended it to their parents or children. You may even have added aliases for email and as backup contact emails to your Apple ID. Suddenly, you realize you're all getting each other's messages and email, and everything is a horrible mess.

Apple doesn't let you split Apple ID accounts up, something I think is way overdue (as is merging accounts). But here's a set of strategies that can help.

> Migrate non-Apple email addresses to their own Apple IDs. These are addresses that don't end in icloud.com, mac.com, or me.com. Those addresses can't be moved; they're effectively permanently associated with the main Apple ID.

> Enable Family Sharing for the group of accounts to continue to share and access media and apps across these accounts. This ensures nobody loses access to things they bought or use—as long as the Family Sharing group remains intact and with the same members. (Many apps don't allow shared in-app purchases and subscriptions; developers choose to allow that.)

> Create new Apple IDs for everyone who doesn't have a third-party email address, particularly children, even if they already have aliases in your main Apple ID account.

Let's take this one step at a time.

First, if you have added a non-Apple address to your Apple ID as a "reachable at" or "rescue" address, this column from 2018 (fave.co/3oNzE7g) should help you migrate it to a new Apple ID.

Next, enable Family Sharing. Family Sharing costs nothing, lets you choose to pool total storage among family members while keeping each person's storage private from everyone else, and lets people in the group opt to share purchases. To enable Family Sharing, go to Settings ➔ *account name* ➔ Set Up Family Sharing ➔ Get Started in iOS and iPadOS. In macOS 10.14 Mojave or earlier, open the iCloud preference pane and click Set Up Family. In macOS 10.15 Catalina or later, open the Family Sharing pane.

Finally, create new Apple IDs for kids or other people who have addresses already associated with your existing Apple ID.

1. Log out of Apple ID on all their existing devices via the iCloud controls: In iOS/iPadOS, Settings ➔ *account name* ➔ Sign Out; in macOS Mojave and earlier, sign out from the iCloud preference pane; in Catalina and later, use the Apple ID preference pane's iCloud view.

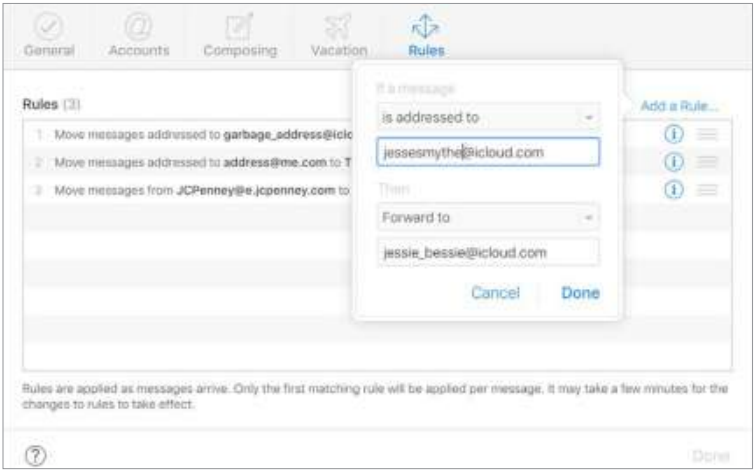
2. When prompted to save or delete items synced via iCloud, figure out which you want, as it will vary by person, device, and service.

3. Create a new Apple ID by following prompts in any of those locations while logged out.

4. Log in to that new Apple ID for each person on each of their devices.

5. Go back to Family Sharing and invite each of the new Apple IDs you created to join the Family Sharing group.

Now you can forward email from your main Apple ID account for those iCloud accounts that you can't transfer to the new iCloud addresses for people you just made.



A forwarding rule lets you keep old iCloud aliases in use even as you create a new Apple ID for people who formerly shared your account.

Take this as the example. Let's say one of your kids' names is Jesse Smythe, and you had **`jessesmythe@icloud.com`** registered as an alias with your Apple ID account. Their new account is **`jessie_bessie@icloud.com`**. iCloud lets you forward email via rules directly at icloud.com, so you don't have to keep a Mail app running on a Mac to make this happen.

1. Log in to iCloud.com with your main Apple ID.

2. Switch to the Mail app, click the gear icon in the lower-left corner, and select Preferences.

3. Click the Rules tab.

4. Click Add a Rule.

5. Using popup menus and fields, create a rule that reads, in effect, "If a message, is addressed to, **`jessesmythe@icloud`**, Then, Forward to, **`jessie_bessie@icloud.com`**," and click Done.

6. Repeat rule 5 for any additional associated iCloud addresses and aliases.

Your account is now as split up as it can be without losing access to email or purchases at each account through forwarding and Family Sharing.

HOW TO SET UP AN APPLE ID WITHOUT A PAYMENT METHOD

What if you want an Apple ID but plan to never pay for a single thing from Apple through that ID? Apple makes that possible, though it's not a highlighted method, since it's frequently the case that you will pay Apple for a service or for software.

If you don't have an Apple ID account or want to set up a fresh one

You can create an Apple ID via the App Store in both iOS/iPadOS and macOS.

In iOS and iPadOS:

1. If you have an existing Apple ID account you don't want to use, log out: Go to Settings ➜ account name ➜ Media & Purchases and tap Sign Out.

2. Launch the App Store.

3. Find an app you can download at no cost. Such apps will have a Get button. Tap Get.

You can remove unwanted payment methods from your Apple ID account.

4. The App Store prompts you for an Apple ID. Tap Create New Apple ID.

5. When prompted for a payment method, select None.

6. Follow the remaining steps to validate your account.

In macOS:

1. Launch the App Store.

2. If you have an existing Apple ID account you don't want to use, choose Store ➜ Sign Out.

3. Find an app you can download at no cost. Such apps will have a Get button. Click Get.

4. In the Apple ID dialog that appears, click Create Apple ID.

5. Follow prompts. At the point where you're asked for a payment method, select None.

6. Follow the remaining steps to validate your account.

If you have an existing Apple ID

You can remove payment methods from existing Apple ID accounts in some cases. Apple requires a payment method on file if you are the family organizer for a Family Sharing group, and for accounts set up for children under 13.

In iOS and iPadOS:

1. Go to Settings ➜ *account name* ➜ Payment & Shipping.

2. Tap the Edit button.

3. Tap the remove (minus in a red circle) button for each method.

4. Tap Done.

In macOS:

1. Launch the App Store.

2. Choose Store ➔ View My Account and then click View Information.

3. Click Manage Payments.

4. Click Edit next to a payment method and click Remove. Repeat for each payment method.

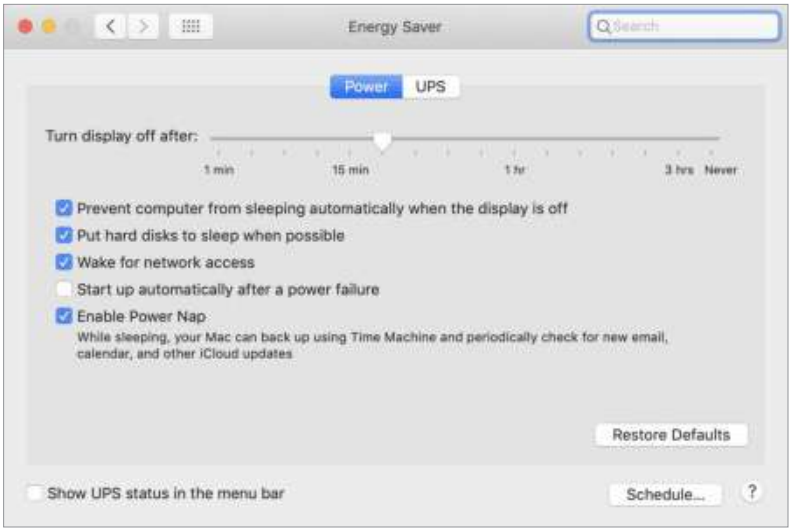
HOW TO SET UP SLEEP MODE ON A MAC THAT HAS BUS-POWERED EXTERNAL STORAGE

An external hard drive or SDD can be very useful with a Mac that has a low-capacity internal drive. Some Mac laptop users routinely keep an external drive plugged in, and they may have encountered a problem with unmounting that can be easily solved with sleep settings found in the Energy Saver or Battery preference pane (depending on your version of macOS).

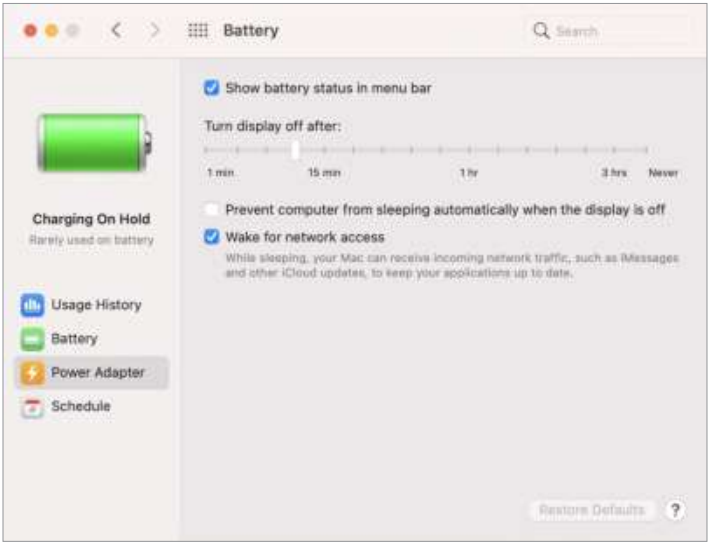
If your drive has its own power adapter that plugs into an AC outlet, you almost certainly haven't encountered this situation with either a laptop or desktop Mac. The AC power keeps the drive running even when your Mac goes to sleep.

However, if you're using a bus-powered drive—one that gets its juice from a USB or Thunderbolt 3 port of your Mac, or a connected hub—you can wind up with settings that power down the drive and thus unmount it without proper safeguards in place.

(A side piece of advice: This can also sometimes happen when a USB or Thunderbolt cable is in the midst of failing, particularly if your drive unmounts randomly at other times. Swap in another cable to see if the behavior goes away.)


Energy Saver
Search
Power
UPS
Turn display off after:
1 min
15 min
1 hr
3 hrs
Never
Prevent computer from sleeping automatically when the display is off
Put hard disks to sleep when possible
Wake for network access
Start up automatically after a power failure
Enable Power Nap
While sleeping, your Mac can back up using Time Machine and periodically check for new email, calendar, and other iCloud updates
Restore Defaults
Show UPS status in the menu bar
Schedule...
?

Energy Saver in Mojave offers an array of options; the top two are the ones to focus on.



Big Sur's Battery preference pane has a single setting to modify.

This is typically an issue only with a Mac laptop, not a desktop, as laptops are designed to reduce wear and tear on the battery, even when they're plugged into power. And not all drives work the same: Readers report that some drives recognize sleep mode and properly power down, while others lose the connection with the Mac, resulting in an error when it wakes back up.

In macOS 10.15 Catalina and earlier, the Energy Saver preference pane's Power tab has two separate settings to configure; in macOS 11 Big Sur, look to the Battery preference pane's Power Adapter view:

> In all versions of macOS, enable "Prevent computer from sleeping automatically when the display is off."

> In Catalina and earlier, disable "Put hard disks to sleep when possible."

The first setting keeps your Mac from going to sleep while plugged in unless you explicitly choose → Sleep. This way, you can eject your drive manually before putting the Mac to sleep. While this adds cognitive overhead, it will prevent drive integrity problems.

The second option disables macOS from attempting to put hard disk drives (HDDs) to sleep; it has no effect on SSDs. An external HDD may correctly respond to this effort by the Mac to reduce usage that can reduce its lifespan, but apparently not all HDDs interpret macOS's command correctly, so it can cause an unintentional unmounting, too.

With a fresh external drive, you can test which of the two settings should be used separately or together, and then use Disk Utility's First Aid feature to ensure that the drive's logical structure remains intact if its volume or volumes unmount incorrectly during testing. ■